The Builder.

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Notes in New Zealand.

THE Britain of the South is the description New Zealanders often give of their admittedly beautiful country, with its cool and bracing climate, and its green and smiling valleys, hills, and plains. But in their own opinion and that of many visitors it is, so far as nature is concerned, a new and improved edition on somewhat larger lines, with the one exception of volcanic activity which could well be spared. And as to its population, the British type is perhaps better preserved in this colony than in any other part of the Empire, for the stock is practically pure and food and climate are the same, or, if anything, better. It is also curious to note that at its colder southern extremity the population is predominantly of Scotch descent, while English monopolise the centre of the middle island, and the irrepressible Irishman is fortunately well distributed over the whole country. In a few generations they will mix, and a new and, let us hope, improved Anglo-Scoto-Celtic type be evolved in this southern land. Judging by present indications, they will be a tall, sturdy, fresh-coloured and self-reliant race, attached to the soil and outdoor life, and little likely to congregate in closely-packed cities as perforce do the great majority of Britons. With an area slightly larger than that of Great Britain, and a present population of only 800,000, there is plenty of room for healthy expansion for generations to come.

But cities there are and cities there must be, so it may be interesting to note their present condition and the promise of their future. Commencing at the south, Invercargill may be referred to as a wide-spreading town of 11,000 inhabitants, with a few streets devoted to business and the rest to residences, mostly of moderate size but universally detached, one-storied, built of wood, and surrounded by hedges and gardens full of brilliant English flowers. The hedges are of "cupressus macrocarpa," clipped to perfection, and would charm the heart of the up-to-date young architect of "formal" tastes, for there he would see an ideal realised, which, alas! in our harsher climate requires the patience of many years. But over the architecture of most of the buildings it were kindest to draw a veil, for in the commercial portions cement is rampant and the detail "Colonial Italian," while weatherboard is the universal material for domestic structures. There are, however, one or two recent indications of capacity, so there is hope for Invercargill architecturally, and ten years hence another visitor may, and, let us hope, will, see a great improvement.

The city site is as flat as a pancake, its plan that of the prosaic chessboard, and only two buildings rise predominantly above the general level. One of these is the water tower, 100 ft. high, a circular iron tank elevated on the top of a four-storied structure of red and black bricks, with as many windows as a dwelling, and as much misplaced feature and detail as could well be crowded on to its walls, an utter travesty of what a weight-supporting tower ought to be. The other is the unfinished Roman Catholic Cathedral, a Greek cross in plan, about 70 ft. by 70 ft., with an outer dome and drum of wood rising to 110 ft. But the main walls are only 14 in. thick and the windows large! It is true there are piers at the crossing, but 14-in. walls are rather too thin, even for a colonial cathedral. It is said that the architect is a clerical dignitary, assisted by a "practical" man, so one's wonder may cease. It will certainly make a great show for a little money while it lasts. Perhaps twenty or thirty years hence another will be required thrice its size, so possibly there is some sense in an apparent absurdity.

But adieu Invercargill, may your gardens prosper and your architecture improve! and away through the fertile southland to the Edinburgh of the Southern seas—Dunedin. Like its prototype, it is situated on an arm of the sea and is hilly, but there the resemblance ends. Why it is placed where it is, is hard to understand. A narrow strip of level ground, fronting shallow water and hemmed in by almost precipitous hills, up which the town has crept and overflowed into the valleys beyond, that is Dunedin. Towards the south and the sea beach a working-class quarter has spread out over what was once a sandy waste, but this is not the city, only an adjunct. On the narrow strip facing Port Chalmers, containing the business

quarters and more important buildings, the principal streets run parallel to the shore, but beyond them are set out diagonally to climb the hills, though even so are scarcely negotiable. In some cases the citizens have practically given them up as a bad job, so far as wheel traffic is concerned, and have formed them into sloping gardens with zigzag footpaths for foot passengers only; truly a most estimable way of turning a failure of one kind into a success of another. There are two centres to the city, the one designed, the other accidental; and, as often happens, the latter is the more important architecturally. The former is the Octagon, spanning the main thoroughfare (of course named Princes-street), and is graced by the town hall, but by nothing else of note (A: see lithograph plate of illustrations). This building stands well, and consists of a façade with wings and central tower. It is three-storied, treated as a basement with pilasters above, and the Renaissance detail is fair. The tower is surmounted by an iron balcony around the lantern, which is the chief blot on the design, but it looks like an afterthought, and is possibly the outcome of aldermanic wisdom.

Dunedin as a city strikes one by its air of solid prosperity, and, appropriately enough, its most important building architecturally is a bank, and that the Bank of New Zealand. It fronts the intersection of Princes-street and High-street (C on plate), the second centre above referred to, and is a really well-designed specimen of Renaissance type built in dark grey stone. Its two stories are marked by three-quarter Doric and Corinthian orders, and the only point for criticism is the somewhat redundant detail, especially in the upper frieze. Some may perhaps choose the neighbouring First Presbyterian Church as the typical building of Dunedin. It certainly is more prominent, and shows up finely on its bluff from the harbour, but it is of that lean and starved though graceful Gothic so much affected in the middle of the last century. The illustration (E) will save description, and it will be noted how much it would have been improved had the square part of the tower been built 10 ft. or 15 ft. higher. For a wonder the Roman Catholics have not secured the best site, but then it must be remembered Dunedin was first settled by guaranteed members of the "Free Kirk," and it was not till long after that sufficient Catholics collected to support the institutions of their own faith. Their cathedral (B) is well up the slope of the hills above the town, and is at present only a front with two towers and nave and aisles. Its nearly black stone with white dressings is harsh in contrast, and its detail is of very ordinary character. But it is by no means bad, as is some of the remaining ecclesiastical work of the town. Education is naturally well looked after in a Scotch community, and is prominently in evidence in the University buildings and High School, the former on the flat near the shores of the harbour, the latter perched half-way up the hills adjoining "the Belt," a public reserve mostly covered with the dense but beautiful native "bush," and stretching for a long distance between the city and the suburbs. The University is still incomplete, but as far as built gives promise of an effective composition in its style, the early Domestic Gothic of forty years ago. The tower is the most striking feature, but it looks somewhat top-heavy, owing to the corbelled angle turrets. The High School, on the other hand, is complete, and its more massive principal tower, with its portico and bay windows, fits better into the general scheme, though even in this case the pinnacles are too pronounced for the size of the tower. But the whole of the building stands well and looks well, and its Tudor Gothic seems to be more in harmony with scholastic traditions.

The most noticeable work of recent date is perhaps the Law Courts (F), a rather florid but, on the whole, satisfactory design in Early Domestic Gothic. Internally, the details are carefully studied in the style, but practically the plan, though well arranged, is defective in light and air; the passages and principal courts are entirely dependent on top lighting and artificial ventilation, and hence are somewhat stuffy. The Police Court alone possesses windows, and is apparently the only one in which the acoustics are not faulty, for the others are lined with cloth hangings. A hideous feature of the exterior is the iron fire-escape balcony to the caretaker's quarters, which, though treated ornamentally (?), disfigures one part of the front. And this to a building of two stories only!

These iron fire-escapes are seen all over the city, attached to hotels, warehouses, factories, etc., wherever a few people are congregated. In cities like Chicago and New York, with buildings of great height, they are essential to safety, but to see them applied indiscriminately to two-storied brick structures, as well as to those of three or four, is simply absurd, and a satire on the lack of common sense characteristic of the official mind. One especially glaring example is a two-storied hotel, in one of the busiest of the city thoroughfares, with a substantial verandah over the pavement reaching to the first floor windows. But here also the iron balcony, with railings complete, is set close above the verandah roof. Verily, with our over-abundant Acts and regulations and hordes of inspectors, modern civilised life affords us but little of the freedom and liberty on which Britons so pride themselves.

But to return to our criticism of architectural efforts. The Prison, close adjoining the Law Courts, is a new Free Renaissance building of red brick and stone in two stories; it is of very commendable design, and, though anything but repellant, unmistakably expresses its purpose. The Police Courts adjoining are older, and designed very fairly in Gothic "*à la* Waterhouse," but artistically quite secondary to the Prison. A little distance away work is proceeding on the new railway-station, which, if the promise of its ground story is fulfilled, should form one of the architectural triumphs of the city. It is built of dark stone walling with white stone features, as are most of the larger buildings, and the contrast is rather hard. A noticeable structural item is the cement concrete backing to external stone work and concrete internal walls. The central entrance and its flanking arcades with rusticated red granite Doric columns look well, but the unequally-balanced wings show some eccentricities of detail that had better have been avoided.

The original Hospital building (G), standing in a large block at the University end of the town, is such a curious structure that one wonders why it was ever built. It is of three stories apparently, but really only two, the lower windows being very large and round-arched and the upper small. Internally, there is a large central hall, top lit, with a narrow wooden gallery around it. The building also possesses two large towers and four small ones. It seems that the people, who many years ago wanted an Exhibition, could only get a grant in aid from the Government on condition that the building should be made use of subsequently as a hospital. Hence the anachronism. Of course pavilions of normal design have since been added, and the original structure is now used solely for administrative purposes, with the exception of two wards still retained therein.

It would occupy too much space to criticise or even refer to the many other buildings showing architectural character, of which the Stock Exchange, the Grand Hotel, the Standard and the Australian Mutual Provident Insurance Co., Sargood's warehouse, and the New Zealand Clothing Factory may be noted. There is also a very fairly-designed Gothic memorial at the intersection of Princes-street and High-street (C), and another in the Octagon, amusing for its inscription, which leaves one in doubt as to who is the person commemorated, the erector, or the ecclesiastical dignitary in whose honour it was nominally built. As to the suburbs, they are charming in their natural features, but there are few buildings of any size or good design, and wood is still the dominant structural material. So, with most pleasant recollections of a solid, steady-going, prosperous city, which shows wonderful progress for its fifty or sixty years of growth and 50,000 population, one may take leave of Dunedin and wish for it steady advancement in all the arts of life.

NOTES.

The Trades Union Bill.

THE section of the Trades Union Bill as to peaceful picketing has, after considerable discussion, emerged from Committee in its original shape, all the amendments on it being rejected. This important provision runs now as follows:—

"It shall be lawful for any person or persons, acting either on their own behalf, or on behalf of a trade union, or other associations of individuals, registered or unregistered, in contemplation of, or during the continuance of any trade dispute, to attend for any of the following purposes, at or near a house or place where a person resides or works or carries on his business, or happens to be—(1) for the purpose of peacefully obtaining or communicating information; (2) for the purpose of peacefully persuading any person to work or abstain from working."

There can be no doubt that if the Bill becomes law it will—as regards this section—become law in the above form, and it is certain to get on the statute-book sooner or later. Nevertheless, it will sanction a form of moral and mental violence, since it is altogether a different thing for a crowd of men to assemble round the gate of a factory for the

ostensible purpose of persuasion, and for one individual to meet another and to argue with him on a given subject. The value of the section to trades unions lies in its power of menace, and the section is one which, say what trades unions like, is contrary—as experience shows—to individual freedom.

The Channel Ferry Scheme.

THIS project, which is essentially the same as that brought forward years ago by Sir John Fowler, is again before the consideration of Parliament, but we doubt very much whether the sanction sought will be obtained. For the accommodation of the ferry steamers at Dover—the port selected as the English terminus of the service—an extensive marine station would be necessary, and for this there is really no room in the Commercial harbour. The Dover Harbour Board have their own plans for the future development of the port, and it is not likely that they will tamely submit to the authorisation of the proposed marine station for the train-ferry. Between the Prince of Wales and Admiralty piers there is no room to spare for vessels in addition to the trans-atlantic and cross-channel steamers and craft of various kinds using the tidal harbour. On the landward side of the harbour gates all available space is already taken up, and it is difficult to see where the projected station could be established. Moreover, the considerable tidal range at Dover is a distinct obstacle to the scheme. Except in the middle of the little bay, the town is almost crowded into the sea by cliffs and downs. The Admiralty will allow no use to be made of the National harbour for commercial purposes, and the only available site would be on part of the area controlled by the Harbour Board. For the reasons already stated, we do not think it probable that any portion of this will be secured.

The Non-provided London Schools.

THE very careful Report of the Education Committee of the London County Council as to the non-provided or old "voluntary" schools in London, which was submitted to the Council on Tuesday, is an important document in regard to the structural state of these 438 schools. In 342, or 78 per cent., the drains have been found unsatisfactory; 25 per cent. are found unsuitable for their purpose. In some the staircases are dangerous in the event of fire or panic; ventilation and masonry is often bad; and "in several instances," says the Report, ventilation is secured only by opening both windows and doors. It is shown that the Report must necessitate immediate work to remedy the defects or to replace the deficient buildings. It shows what has been constantly insisted on in these columns, that the inspection of school structures by inspectors whose primary business is education is ridiculous. A scholarly gentleman may be a good judge of education, but in regard to sanitation and building construction he is a mere amateur. The Report may very well make other local authorities all over England look to this matter. Many outbreaks of diseases of an epidemical character are certainly due to bad ventilation and drainage in elementary schools, and the health of the children is permanently lowered by the character of the buildings in which they study. At any rate, Londoners now know the state of the non-provided schools, and it is their duty to bring them up to the mark.

Tramways on the Embankment.

BY the casting vote of the Speaker, the thorny question as to the desirability of tramways on the Victoria Embankment will come again before Parliament after consideration by a committee. Whatever may be thought about the advisability of tramways in the streets at all, it is quite certain that lines already in operation cannot be abolished, and that, so far as the southern system is concerned, the County Council will continue the programme to which they are virtually committed. At the present time an enormous traffic is conducted to and from Westminster and Blackfriars bridges, and considerable portions of the public highways at these places have been converted into what are virtually open-air railway-stations, very inconvenient for passengers, and particularly obstructive to ordinary vehicular traffic. The County Council have no moral right to monopolise the public streets in this way, but having a legal right they will continue to do so until some preferable alternative is offered. In our opinion, the best way of mitigating the nuisance would be to create a loop, *viâ* the Embankment, connecting the Westminster lines with those of Blackfriars, so that cars arriving at either of the present termini could cross over to the other, and commence the return journey without having to be shunted from one line to the other. The Embankment is not a popular resort, nor is it crowded with traffic. Hence no serious objection offers; while the removal of long rows of cars from the southern approaches to the two bridges would be a great advantage. Further, passengers to and from town would not be under the necessity of crowding round the cars at two points, for the loop-line would permit and encourage them to enter and to leave the vehicles at various stopping-places distributed between the two ends of the Embankment.

The Recent Telephone Fire.

MANY of our readers may have occasion to remember the fire that recently caused so serious an interruption to their telephone service. The inquest held at the City of London Coroner's Court, under the City of London Fire Inquests Act (1888), serves to emphasise the desirability of fire-resisting construction in all buildings where electricity is dealt with on a large scale, even if at low voltage. Under normal conditions there is no risk of fire from the current actually used, but lightning or the accidental contact of telephone cables with highly-charged conductors may cause a fire, with the most inconvenient results. This is exactly what happened in the case of the "Bank" exchange of the National Telephone Company, owing to the contact of a telephone cable with a conductor-rail on the District Railway. The immediate results were a fire, which destroyed a two-roomed timber structure beneath a cable-supporting derrick on Mansion House-chambers, and another fire in a distribution-room on the top floor of a building 200 yds. away. The consequential result was the interruption of some 6,000 exchange and private telephone services. In these days, when incombustible building materials are practically as cheap as wood, it is astonishing to find they are so little used. In the case of fire it is always the unexpected that happens, and no precaution should be neglected, especially in places where a mishap, trivial in itself, may involve far-reaching consequences.

Iron and its Alloys.

AN important paper by Mr. T. Baker, describing the results of a research on the magnetic properties of some alloys of iron and silicon, appears in the *Journal* of the Institution of Electrical Engineers, which was published this week. In addition to testing the alloys mechanically and electrically, Mr. Baker employs the method of microscopic research which has proved so helpful in metallurgy. The alloys experimented on were made of Swedish wrought iron and a small percentage of silicon. It was found that if the silicon present did not exceed 3 per cent. there was no alteration in the mechanical strength of the alloy. If the quantity of the silicon exceeded about 4 per cent. the alloy became hard and brittle, and was very difficult to shape in the lathe. The presence of the silicon makes it much easier to magnetise the metal, but prevents it from becoming so powerful magnetically when subjected to high magnetising forces. It prevents it also from retaining its magnetic qualities so well. Whilst making it therefore less suitable for the field magnets of dynamos, it makes it much more suitable for use in alternators and in the cores of transformers. Dr. Hicks had previously suggested that those elements which give iron high permeability and low retentive force would cause it to crystallise in large crystals. It is interesting to note that Mr. Baker has found that the size of the crystals seen by the microscope in the mass of the iron increase as the percentage of the silicon in the alloy increases. On the other hand, it is well known that the addition of a small quantity of tungsten and chromium makes the metal crystallise in very small crystals and enormously increases its retentivity. The microscope apparently will be a powerful aid in the future to the manufacturer of dynamos.

The Blackwell's Island Bridge, N.Y.

ACCORDING to the plans authorised in the year 1884, this bridge was to consist of five cantilever spans, with one pier on Manhattan Island two piers on Blackwell's Island, in the middle of the East River, and one pier on Long Island shore. After the lapse of several years the municipal authorities of New York took up the project, and in 1902 the Bridge Commissioner decided to make the spans of the following lengths:—The Manhattan shore span 469 ft. 6 in., the main river span 1,182 ft., the Blackwell's Island span 630 ft., the second river span 984 ft., and the Long Island shore span 459 ft. Thus the proposed structure will include one of the longest cantilevers in the world, although the span will fall far short of the 1,710 ft. cantilevers of the Forth Bridge.

Up to the present time no particular hurry seems to have been displayed in connexion with the progress of work, but as the congestion of cross-river traffic has increased very rapidly of late years there is reason for believing that operations will be pushed forward with all possible speed. The masonry piers are already built and the superstructure is well in hand. When completed, the Blackwell's Island bridge will constitute the fourth means of cross-river communication, and will form a welcome addition to the three suspension bridges between New York and Brooklyn.

The Paris Façades Competition.

THE jury concerned in the prizes now annually given for what are adjudged to be the best modern house façades in Paris, have just given their awards in respect of the houses built in Paris in 1903. The prizes are given for the following houses: 48, Quai de la Rapée—M. Friésé, architect; 41, Rue Damrémont (M. Goujon); 9, Rue Claudechahu (M. Klein); 98, Avenue Malakoff (M. Natanson); 185, Rue St. Honoré (M. Sibien); and 96, Rue Beaubourg (M. Walwein). The number of competitors becoming more and more important each year, M. Quentin-Bauchart proposes to ask the Municipal Council to award further prizes for the future competitions.

Seven Dials Mission House, West-street, St. Giles.

THE new buildings which form the headquarters of the Seven Dials Mission, comprising Sunday-schools, clubs for men, girls, and boys, gymnasium, meeting-rooms, etc., have been erected after plans and designs of Mr. C. W. Reeves. They cover the site of the former mission-house—the old vestry house in West-street, which was built, together with the adjoining chapel, in 1693, for a Huguenot congregation who had migrated to Newport Market from Weld House in Great Wild-street. The Episcopal Chapel, at first known as La Pyramide de la Tremblade, subsequently became a scene of John Wesley's labours during the period 1743-1790, and is frequently mentioned in his diary; in 1800 it was added to the establishment. The Seven Dials Mission removed from Short's-gardens to West-street, where they bought for 4,500*l.*, in December, 1887, the freehold property, but three or four years ago the London County Council called for the demolition of the premises as being in a dangerous condition. The first floor of the vestry-house contained an apartment having three windows opening into the chapel; it was known as the "Nicodemus room," being used by those who attended the Methodist services, yet desired that their presence should not become known. A drawing of the old house and Wesley's portable open-air pulpit have been preserved as relics.

The Process Engraving Exhibition.

THE Exhibition of examples of Process Engraving at the South Kensington Museum is a very useful one for those who wish to follow out the progress of the methods of what may be called mechanical reproduction of pictures and drawings, and it is rendered more useful in this sense by a long and carefully written account of the history of the subject by Mr. J. Waterhouse, which forms the preface to the catalogue. In looking at some of the examples of photolithography of half a century ago, one is struck by their comparatively excellent character, so that it does not appear that the results have been much improved on since then, though probably the facility of production has much increased. The Art Photogravure Company show one or two remarkable reproductions in colour, especially M. Benjamin-Constant's portrait of the late Queen, which are described as in "one printing." Messrs. J. Swain & Son show a set of six small pictures reproduced by their "Half-Tone" Colour Process," which are very successful, one of a picture by Mr. Montague Smythe appearing really almost like a water-colour drawing. The defect of many colour reproductions is to be too hard and precise; a broken surface is better. This is attained very well also in the reproduction of a number of Mrs. Allingham's drawings by the Hentschel Colour-Type Process. One cannot but reflect, however, on seeing a large collection like this of mechanical process work, how uninteresting all this is in comparison with the hand-work of engraving and etching. Process reproduction has no doubt had the advantage of extending the knowledge of pictures by multiplication at a cheap rate, but it has none of the artistic interest of engraving by hand.

Institute of Painters in Water-Colours.

THE Ninety-second Exhibition of the Institute of Painters in Water-Colours is held under difficulties, for owing to alterations going on in the building their fine staircase is closed, and the visitor only mounts by the other staircase through an atmosphere of dust and plaster. The Institute Exhibition contains a great number of the class of drawings of which one looks in the catalogue to see what is the subject before finding any interest in it; and it may be questioned whether there is a single work in the gallery of the highest order of interest. Mr. Lee Hankey, who seems to aim at producing very large water-colours with a moral meaning, has fortunately got a better subject, in his picture of the sceptical clergyman administering the sacrament (473), than the disagreeable one which he chose a year or two back, and his picture is striking, though the interest depends rather on the thing meant than the way it is painted. All Mr. Frank Dadd's semi-humorous subjects are excellent both in point and in artistic execution. In a very different way Mr. Henry Stock pleases us with his picture of a naked infant on "A Bed of Roses" (6), a work in its feeling and colour a little recalling Watts. "The Shepherd" (30), by Mr. Sainton of silver-point celebrity, is conventional but very pretty. There are few other figure pictures that are more than commonplaces: Mr. Henry Stock's allegorical group, "Influences" (333) is fine in colour but rather grotesque in idea; Mr. Walter Langley's "His Only Pair" (503) is a very good and pleasant piece of *genre* painting; and a half-length figure by Mr. Mortimer Menpes called "Iris" (244)—but not Juno's messenger—shows very delicate painting and characterisation in the head. There are, it is true, plenty of figure-pictures of what ought to be important subjects, but they are not interesting. Among landscapes those of Mr. Weedon and Mr. John White can always be depended on, also the sea-pieces by Mr. David Green; and an inland landscape by the same artist, "A Surrey Common" (397), shows a grand bit of sky. Among others to be looked at are Mr. Haité's fine freely-treated garden scene at "Hampton Court" (14); all those bearing the name of Mr. John R. Reid; Mr. Cotman's "Mill on the Ouse" (49; we may say that artists will find a great many subjects among these old timber mills of the Ouse, which have been rather neglected); Mr. Arthur Severn's "The Taj, Agra" (165), a much better representation than some we have seen; Mr. Frank Walton's "Barden Bridge" (184); Mr. Tatton Winter's "Dusky Eve" (239), an original effort; Mr. Claude Hayes's "Near Wells" (256); Mr. Thos. Pyne's two small drawings, "After Rain" (270) and "The West Wind" (274); Count Seckendorff's brilliant sketch of "Venice" (276); Mr. Bruhl's "February Floods" (373); Mr. Hubert Coutts's "An Anglesey Common" (454); and Mr. Leslie Thomson's "La Pernelle—Normandy" (506), a smaller edition of one of his pictures at the last "Six Landscape-Painters'" Exhibition.

The Leicester Gallery.

AT the Leicester Gallery are two rooms full of charming water-colour drawings, the one set by the late Mr. Hine, the other, illustrations of Sussex, by Mr. Wilfrid Ball. The work of Hine, who died in 1895 at the age of 84, goes back of course to a period in water-colour painting different from the taste of the present day, with less glitter of effect, less cleverness, but more repose and more attention than we often find at present. Hine made down scenery, especially that of Sussex, his special study, and for many years his landscapes of this class, with their receding planes of colour in fold after fold of hill, were pleasantly familiar in exhibitions, and one is glad to renew acquaintance with a collection of them. The finest perhaps is "Durlstone Bay, Dorset" (22), so remarkably true to the character of Dorset coast scenery, and in which the zones of light and colour on the sea are so finely treated. "Bible Bottom" (18), another of the finest, appears to be the same scene which is painted on a larger scale in "On the Malling Hills" (24); if not, the resemblance in the lines of composition is curious. Among the smaller works are many that are admirable, dealing with down scenery, sea-coasts (see No. 8, "A Breezy Day"), and ancient structures, such as "Wareham Bridge" (5). The views of "Old Hastings" (44) and the "Old Fish-market, Brighton" (47) have a certain historical interest. Mr. Wilfrid Ball's drawings are, all but one, small sketches of country and village scenes, executed in a broad and true water-colour style; the small landscape "Crowborough Heath" (5) is one of the best examples; and the one large drawing, "The White Mill" (40), a scene by a river, is a very fine work, notable for a grand sky with detached masses of floating clouds. In the vestibule at the same gallery is a small collection of chalk drawings by M. Helleu, portrait figures of women in the same style as his well-known dry-point sketches, but

we like him better as an etcher than in these sketches. Even in his etchings there is a certain want of refinement, not of artistic style but of character; his ladies are essentially "mondaines," which is to say that they are not exactly ladies, in the best sense of the term; and in these sketches the "mondaine" sometimes approaches too nearly to the "demi-mondaine" to leave an agreeable impression.

The Fine-Art Society.

At the Gallery of the Fine-Art Society is a collection of water-colours by Mr. Ernest E. Briggs illustrating "Fishermen's Haunts in the Highlands." As might be expected from the title, these belong rather to the category of what may be called topographical drawings; but the author is possessed of a good broad style, and "The Falls of the Tummel" (26) is a forcible painting of a rush and tumble of water. Occasionally, as in "Fir Trees at the Head of Loch Awe" (39), the artist seems to break from his programme of painting localities, and gives us a fine and poetical bit of pure landscape art. "Stepping-stones at Kyleakin" (24), with the picturesque low white stone cottages beyond, is another landscape which is interesting for itself, as also "Scalasaig, Island of Colonsay" (51). In another room is a fine collection of etchings after Meissonier, by various French etchers. The chief interest of this lies, perhaps, in the opportunity it gives us of seeing so many of Meissonier's designs together. Poetry there hardly is in any of them; the one solitary exception, perhaps, is "The Man at the Window" (106), which suggests more than meets the eye; but the scenes in the Napoléon series bring before us episodes of a great epos with such truth and reality that, if the artist does not bring the poetry of art to his task, he enables us to realise the poetry of life. Meissonier's power lay in his unrelenting study to obtain perfection in the representation of life; he affords one of the most favourable comments on Reynolds's rather questionable dictum that genius was really "an infinite capacity for taking pains." In such a work as "The Sign-Painter," for instance, though the incident and the personages are of little interest in themselves, one is fascinated by the extraordinary personal reality of the landlord who stands looking at the signboard. He belongs to a period quite before that of Meissonier's own life; the painter could never have seen that man in that costume of the day; yet the figure impresses us with such a strong sense of personality that we regard him as a real person rather than a painted figure; we feel that he must have lived some time or other. That is the secret of Meissonier's art; it is not imaginative, but, on the other hand, it is so absolutely and triumphantly real.

Messrs. Dowdeswell Gallery.

A COLLECTION of small pictures of Indian subjects by Mr. Mortimer Menpes is on view at the Dowdeswell Gallery. There is a great deal of charming colour effect in these works, which it is difficult to class exactly; some few of them are oil paintings, the majority are in water-colour on a ground of opaque white, which shines more or less through the colour laid on, producing an effect which is brilliant but rather artificial. There are among them brilliant little fantasies in colour, such as we see in "Workers in Silver and Gold" (7), the front of a shop with two foliated arches in its white walls, two figures in one of the windows, another dimly seen within; the stall-board casts a deep blue shadow on the wall beneath, and on it two bowls, green and red, contribute their colour to the scheme. It is in such scenes as this and "The Red Shutter" (55) that the artist's special gift is best shown; a three-quarter length of "A Woman of Delhi" (14) is however a very interesting sketch; the character of Indian architecture is also well shown in "Through the Streets of Delhi" (59) and "The Golden Temple, Amritsar" (61). In short, these may be called records of impressions of colour and incident rather than pictures in the usual sense of the word.

Society of Miniature Painters.

THE private view of the Tenth Annual Exhibition of the Society of Miniature Painters drew a crowd of visitors to the Modern Gallery on Saturday. The art is not one with which we feel very much sympathy; miniature-painting is rather in the nature of an "elegant accomplishment" (as people would have said in Jane Austen's time) than a serious art, and the chief value of a miniature is for furnishing a portrait on a small scale of some one we are interested in. The collection, however, seems to be a very good one. Among the best things are the portrait of "Miss Eva Brand" (10) by Miss Lee Hankey; Miss Worsfold's "Mrs. Warren" (17); Mr. Jeffcock's piquant portrait of "Mrs. Jeffcock" (23) in a hat and a spotted lace veil; Mr. Sainton's little half-draped "Andromeda" (50), one of the few attempts at an ideal subject; and Miss Stratten's charming portraits of two infants (62 and 63). Miss Jessie Bayes exhibits some miniatures on vellum, of a mediæval character, and a portrait on gesso "A Garden Enclosed" (116), a complete seated portrait of a lady, which is very successful in effect.

A Shakespeare Exhibition.

AT the Dickinson Gallery in Bond Street there is a small exhibition under this title, of which the principal portion consists of a series of water-colour drawings by Mr. A. C. Wyatt, purporting to represent "Shakespeare's Country and Woodland and Meadow"; but the connexion with Shakespeare is not very prominent, nor can we care much for the style of the drawings, though two or three of the New Forest scenes are effective. In addition to these there is a rather interesting collection of engraved portraits of Shakespeare; they differ very considerably, but from among them a certain central type emerges. There is also an oil portrait of the poet, lent by Lord St. Leonards, the history of which is not given, but which rather inspires belief in its authenticity from its marked and individual character. Some old editions of the plays are to be seen, and also (what interested us most) impressions of Stothard's designs of the "Seven Ages of Man," which show more vigour of characterisation than would be expected from Stothard's usually graceful and equable art.

NOTES AND SKETCHES IN SOUTHERN ITALY.—VIII.

BARLETTA AND CANOSA.

THE earliest mention of Barletta is in the "Tavola Pentingeriana," where it appears as Bardulos. It lies on the Ofanto, the ancient Anfidus, on which Canusium had its emporium, a proof that the river was then navigable for over nine miles. Ancient sepulchres have been found on one line which traverses the city from east to west, and probably shows the direction of the military road—the Via Valeria—which went from Rome to the Aternus, then along the shore to Aufidum, and so to Barium, where it joined the Via Egnatia, or Minucia, a prolongation of the Via Appia, which went from Beneventum through Canusium to Barium, Egnatia, and Brundusium. It became the port of Canusium about the time of Theodosius. The mole was of the IIIrd century. The sea is retiring, and remains of it were found during excavations far from the sea, and the castle, which is now surrounded by arid sand, was close to the water in the middle of the XVIIIth century. In 747 the town was called Baruli, but the name Baroletano does not appear till 845. It seems certain that many of the people of Cannæ came to live in Barletta, and S. Sabinus, Bishop of Canosa, built a church with the dedication of S. Angelo, which was consecrated in 493. At the Norman conquest of Apulia Barletta fell to Pierre d'Hauteville. The piazza of the market (now Piazza del Plebiscito) was called "Paniero del Sabato" a few years ago, a word derived from the Greek πανηγυρις, or Saturday market, which shows that this market was established while Greek was the common language of the people, probably in the Xth century, when the Byzantine colony was numerous and prosperous. It was one of the three ports from which Crusaders embarked for the first crusade, Bohemond and Tancred leading more than 7,000 men thither, Normans and native Apulians together. In 1151, by way of reprisal, the town was sacked by the Saracens. In 1172 William the Good stayed in Barletta for some time and gave much to the clergy, and hence the galleys set out for Venice in 1177 which carried the Pope and two legates on his part to settle terms of peace with Frederick Barbarossa. Frederick II. was often at Barletta, and Conrad, after landing at Siponto in 1252, proceeded hither and returned again after the ten months' siege of Naples had been successfully terminated. Manfred made a solemn entry into the town on February 2, 1259, when he was met on the Ofanto bridge by 700 persons with palms in their hands, who sang "Blessed art thou, coming in the name of the Lord." The palace at Barletta was offered by Charles of Anjou to Baldwin, formerly Emperor of Constantinople, after his dispossession by Michæl Palæologos in 1267. There he died in 1275. Charles also established a mint in the city from which the first "regali" and "tari" made of gold issued, according to Lazari and Muoni. In 1459 Ferrante, son of Alfonso, was crowned King of Naples here, and in the same century Ferdinand of Aragon pledged it to the Venetians, together with Trani, Brindisi, and Otranto, against a loan for the purpose of making war against Charles VIII. of France. Ferdinand was besieged in the city by Giacomo Piccinino, who was René of Anjou's general, and only got free by calling in Giorgio Castriota, prince of Epirus.

The governing body was called "Università," and had great liberty. The king only interfered to recommend the selection of upright and popular citizens and to require the delivery of accounts. There was no communal palace, the council met in the church of S. Mary Magdalene, where S. Domenico now stands, and the archives were kept in S. Sepolcro. The captain of the people had a palace, and the Largo del Palazzo marks the open space near its walls. This is united to the Piazza del Plebiscito, close to the Porta Reale, where the Palazzo Pretorio stood (built in 1540), at the end of the broad Via della Corte, which still goes from there to S. Sepolcro under another name. The present Palazzo del Municipio is on the site of the latter. The celebrated "Disfida di Barletta," the challenge given by eleven Italians to eleven French, fought near Corato by thirteen of each nation, in which the Italians were victorious, took place in 1503, when it was besieged for seven months by the French. While Lantrec was in Apulia, Barletta was sacked (1528). Afterwards Renzo da Ceri, determining to hold it for France at all hazards, levelled to the ground

Fig. 1. East End, S. Maria Maggiore, Barletta.

every building in the suburbs. An inscription on the external wall of S. Maria records how "*nel anno* 1528 *fu sachegiata et destructa Barletta per la discordia deli citatini.*" Half of the town was then destroyed. The castle was rebuilt by Charles V. in 1537 (as is shown by an inscription in the vestibule) on the site of the Norman castle and of that built for Charles I. by Pierre d'Angicourt in time to save Barletta from Turkish attack when Turks and French were allied. At this time the towers were erected of which one sees the ruins along the whole coast of Apulia. They were restored in 1584, when the Viceroy Don Pedro di Toledo refortified the town. The Porta di Mare was built by Charles III., according to a notice found in the municipal archives. Earthquakes damaged the town in 1689 and 1730.

The most popular lion of Barletta is the colossal bronze statue of the Emperor Heraclius (as believed), which stands close to S. Sepolcro, though some say that the design and dress are so classical that it is more probably Theodosius. This was recovered from the sea, having been lost by the Venetians through the shipwreck of the vessel which was conveying it from Constantinople in the XIIIth century. It lay on the quay for a long time, and was granted in 1309 to the Dominicans to provide metal for the founding of a bell. It is referred to as being in its present position in a document of 1481, but the necessary restorations (the legs and hands) were made in 1491 by Fabio Alfano, according to the records. The Emperor stands with raised right arm holding a cross, while the other bears an orb. He is dressed as a Roman general, and has a narrow diadem on his head. It is reputed the work of the Greek sculptor Polyphorus. The principal church, S. Maria dell' Assunzione or S. Maria Maggiore (Fig. 1), was completed in 1153, as regards the western part, but not consecrated till 1162. Until 1424, when it gave itself to the archbishop of Trani, it was a self-ruling collegiate church, with an arch-priest at the head. The façade is narrow and lofty, with two pilaster strips in the Lombard fashion dividing the nave from the aisles. The side doors are ancient, with carved architraves, which rest on beasts as corbels. Above them are pretty two-light windows with pierced marble slabs in the tympana above the level of the caps. The central doorway is a late addition. Above it is a window recalling the usual Apulian type, but with columns of different sizes at the sides, and apparently rather later than the side windows, since it is pointed. Eagles are on the right and left of the base, and beasts' heads project at the springing of the arch. Above is a rose, round which again are beasts' heads on corbels. The gable has a round-arched cornice. The interior of this early part has an arcade of four round arches on six columns of cipollino and granite, three on each side, above which are eight smaller arches in the place of a triforium arcade grouped in couples with a pier between, beneath larger arches, and little windows above. The columns have bases which are almost attic and XIIth century caps based on the Corinthian. Lions and double-tailed syrens appear on one in the Lombard fashion, which gives some colour to Herr Mothes's contention that this lower arcade is of very early date. Above the caps are Byzantine superabaci. The aisles are as high as the triforium arcade, and are vaulted without ribs. An inscription on the second cap of the right-hand pier gives the date 1153 as that of the dedication of two columns. The eastern portion of the nave has four pointed arches of different widths, the first being the widest, and no triforium, but piers, which run up to the springing of the vaults. Beneath each arch is a little window. M. Enlart thinks that the plans of the eastern portion are due to Pierre d'Angicourt, who was working at the castle in 1282. The apse windows are trefoiled and pointed externally. The plan suggests Provençal influence, as similar plans are met with at Avignon and Beaucaire. The chapels are vaulted in quarter wagons carried on pointed ribs—a feature common in Spain in the XIIIth century. Shields are suspended above the apse arches. The nave splays out in a curious fashion to the crown of five chapels, which serve as buttresses to the lofty ribbed vault. Their windows are now walled up. One round-arched bay abutting on a pier comes between the earlier and the later parts. The vaulting stops with the piers. The western part of the nave now has a flat, painted ceiling of the XVIIIth century. The local tradition is that most of the columns, the font, ciborium, and ambo were brought from Cannæ after the destruction of that city by the Saracens, but the documents relied on for proof are considered apocryphal. The ciborium has some resemblance to that at S. Nicola Bari, but is later. It has an octagonal pyramidal top with trefoiled piercings, an arcade of little columns and round arches above it, a sloping roof, and another little arcade terminating in a pyramid. The ambo was in much the same style, but has been made over in Renaissance times. It stands on four slender columns, and two more which probably belonged to it now form part of the bishop's throne. Colonettes of various coloured marbles support the arches of an arcade which surrounds it, and the frieze between is of pavonazzetto. Schulz dates both ciborium and pulpit about 1272; Mothes gives 1153, which is certainly too early. The font has a trefoiled arcade surrounding the bowl, and in front of the base is a XIIth century grotesque lion. The XIIth century portion of the church is loftier externally than the later part, and the eastern gable finishes with the usual corbelled cornice.

The campanile stands on the north side of the church, and the street passes beneath it through a flatly-pointed arch (Fig. 2). It terminates with a pyramidal roof on an octagonal drum with corner projections. The next story has a cornice, and is pierced with two two-light windows beneath a round arch on each side, several of which are in the original state. Below it is another cornice with a round-arched corbel table below and a three-light window beneath a round arch, below which is a two-light window with a band of ornament surrounding it, and lower still one of a single light. The slight projection below it crowns the blank story above the street arch. There are several interesting windows and doors on this side of the building, some of which appear to belong to the XIIth century structure. One close to the arch, now walled up, has a fine archivolt, and above it is a small window with pierced slab tympanum. Another door further to the east has a pointed archivolt in three orders, columns in the angles of the jamb, and a pilaster with arabesques on each side.

The church of S. Sepolcro is also interesting as being a very early Italian example of pointed architecture. The most ancient notices of it occur in 1138-44, which almost suggests (as Sig. Carabellese says) that the Gothic Burgundian style appeared in Barletta before it flourished in France, while M. Enlart quotes it as one of the first Gothic buildings of Italy

showing Burgundian influence. The nave has six bays with a pointed arcade and one further to the west as narthex.

The piers are square in plan, with the addition of engaged columns east and west and a pilaster strip towards the nave which runs up to the vault. The caps are roughly carved with a good deal of variety, entwining forms in some cases and in others volutes and rows of leaflets turning over. Some of the abaci are heavily moulded, some slightly. The vaulting is quadripartite throughout. The section of the nave arcade is a simple torus within an unmoulded arch, while on the other the angles of the inner arch have little hollows stopped just above the cap. The arms of the crossing do not project beyond the apses, which are three in number and bear a shallow-pointed arcading on the exterior, which appears also on the south side. The small windows of aisles and clearstory are round arched. The central window has the usual Apulian beasts on corbels. A pointed window is also in the southern apse. The north door is pointed, with a gable surmounting it, but the west end has been modernised. Over the crossing is a later tower, where the archives were kept, dated 1784, but below it the earlier octagonal drum shows angle pillars corbelled out apparently supporting squinches. The tower was pulled down in 1737. The narthex is divided into three bays, which continue those of the nave and aisles and are connected with them by pointed arches of two orders, the middle arch springing from low pilasters. The upper story has an arcade of five arches, the central one larger and flanked by piers, the side ones with coupled columns between them, and above the flat-pointed arch below is a queer little monster supporting a corbel table, which M. Enlart says was to provide space for a small altar on the floor above, an arrangement which was frequent, but has not often been preserved. A similar arrangement occurs in the tribune of La Madeleine at Vézelay. In the chapel are some remains of Byzantine wall paintings. The side bays have each a door opening on to the flat roofs of the aisles. An open porch with a single square vaulted bay formerly projected from the centre of the west front, but has now disappeared with the exception of the shafts on the wall from which the lateral arches sprang. The masonry of the vaults is brought to a uniform slope and covered with roofing tiles. The font is like a great circular cap set on a base much too small; round it are eight corbelled arches, with the symbols of the Evangelists and bosses alternately below them and five-pointed stars in the spandrels. Pine-cones and gourds appear in the carved ornament. It had a dome-shaped cover like a Swiss dome added during the Renaissance period. M. Enlart says that two towers were projected for the west end which never reached the level of the roof. The decoration is Romanesque, and it more nearly resembles the buildings of the Saône and Loire than those of the Yonne, Côte d'Or, and Nièvre. He holds a brief for a French origin and remarks that "the beauty of the sculpture reveals a French hand." It seems more probable that the French influence is indirect, since it was built by the prebendaries of the Holy Sepulchre at Jerusalem, and that the architect was a member of the order who came from Palestine.

A church of S. Andrea was consecrated by Gelasius I. in the VIth century and was then dedicated to S. Peter and later to S. Salvatore. A door remains, with carving of the end of the IXth century signed "IncoLa TRanensis sCULprit sImeon RagVseVs. DomIne MIsere," the same sculptor who dates his work at Monte S. Angelo 895. Herr Mothes points out that if R is accepted as meaning forty, the larger letters of the inscription form a chronogram giving the date 900. The tympanum shows Christ with the Virgin and S. John and angels at each side beneath a rich arcade, but on the jambs are figures of saints in low relief with Byzantine decoration above and below. The church was given to the Franciscans in 1532. A Gothic door of the Angevin period still remains in S. Stefano, and in the main street is the Gothic Palazzo Bonelli of the XIIIth century, the preservation of which is due to the Ufficio Regionale, which refused to comply with the request of the municipality to be allowed to destroy it.

Canosa, the ancient Canusium, stood on a prolongation of the Via Appia. Horace says it was founded by Diomed and calls its inhabitants bilingual. It was a Greek colony with the name of *κανυσιον*, as shown by coins found on the site. Livy notes it as the refuge of the Romans who escaped from the field of Cannæ, and it appears to have been one of the most magnificent and cultured cities of Italy from the cameos, objects of gold and silver, Greek and Roman coins which have been frequently dug up, as well as fragments of columns, architectural carvings, and mosaic pavements. It was much larger than the modern Canosa, which stands on part of its site. The remains of constructions are slight and sometimes scarcely recognisable, but the circuit of the walls was nearly nineteen miles. An aqueduct brought water to the city from twenty miles away. On the road towards Egnatia the constructional part of a triumphal arch exists, believed to have been built in honour of Trajan, though the common name of it—Porta Varreuse—ascribes its construction to Terentius Varro, and among the ruins are some which appear to have formed part of an amphitheatre. The city fell under Roman domination about 300 B.C., and a colony was established there. A list of the names of the Romans sent to form this colony, with their rank and employment, was found near the church of S. Sabino, engraved on a tablet of brass, and was sent to the museum at Naples. The "Campi di Diomede" stretched along the Anfidus between Canusium and Cannæ. The bishopric was established before 347, in which year a Bishop Stercorious of Canusium appears at the council of Sardis. According to some, S. Felix, to whom there is an altar in the cathedral, was the first bishop; certain names are S. Probus (470), S. Rufinus, S. Memor (about 500), and S. Sabinus (514-66); the last has supplanted S. Peter as patron saint. The city was destroyed by the Saracens in the VIIIth century, and most of the population fled to other places, but it was rebuilt 963, and, though the body of S. Sabinus was taken to Bari and the cathedral, as the seat of the archbishop of Bari and Canosa, was transferred to that city in 1902, the church of Canosa retained its independence under the government of a prelate, called "prevosto." In 1818 it was joined to the bishopric of Andria. The castle on the hill, built with great stones taken from the ancient Canusium, is in ruins (restored by Charles I. in 1270), and the city, which was founded under it in the Middle Ages, has descended towards the plain. It now has about 13,000 inhabitants. Under the Normans, Robert Guiscard, Roger, Boemond, and William his nephew, it regained prosperity. In 1643 Filippo Affaitati of Barletta bought it from the Grimaldi of Monaco, but his creditors afterwards sold it for 48,000 ducats to Fabrizio Capece Minutolo. It has suffered much from earthquakes, especially in 1361, 1456, and 1627. In 1851 more than 370 houses were thus ruined, and in 1857 a good many people lost their lives.

A mediæval gateway ornamented with remains of antique reliefs is called "Porta Diomedis." The ancient cathedral of S. Peter is in the now ruinous city and practically nothing remains of it but the plan. The newer one, S. Sabino, was built between 1093 and 1100, according to local tradition by Boemund Prince of Taranto and Antioch. It was consecrated by Paschal II. in 1101, as an inscription at the entrance of the sacristy records. The church is a Latin cross in plan, and is entered by steps descending beneath a western tower, which was rebuilt in 1825, for the level of the ground has risen considerably. The nave is roofed by three flat cupolas, which rest on pillars set in the angles of the bays. Six are of verde-antico, valued by Vanvitelli at 18,000 ducats each, and two of the four in the north transept, which are of granite taken from ancient buildings, bear Corinthian caps of the Norman period worked in white marble. Between the columns the nave walls are pierced by two low arches on each side. Outside the low vaulted aisles are three modern chapels. The plan with the cupolas shows direct Byzantine influence and that this is probably the

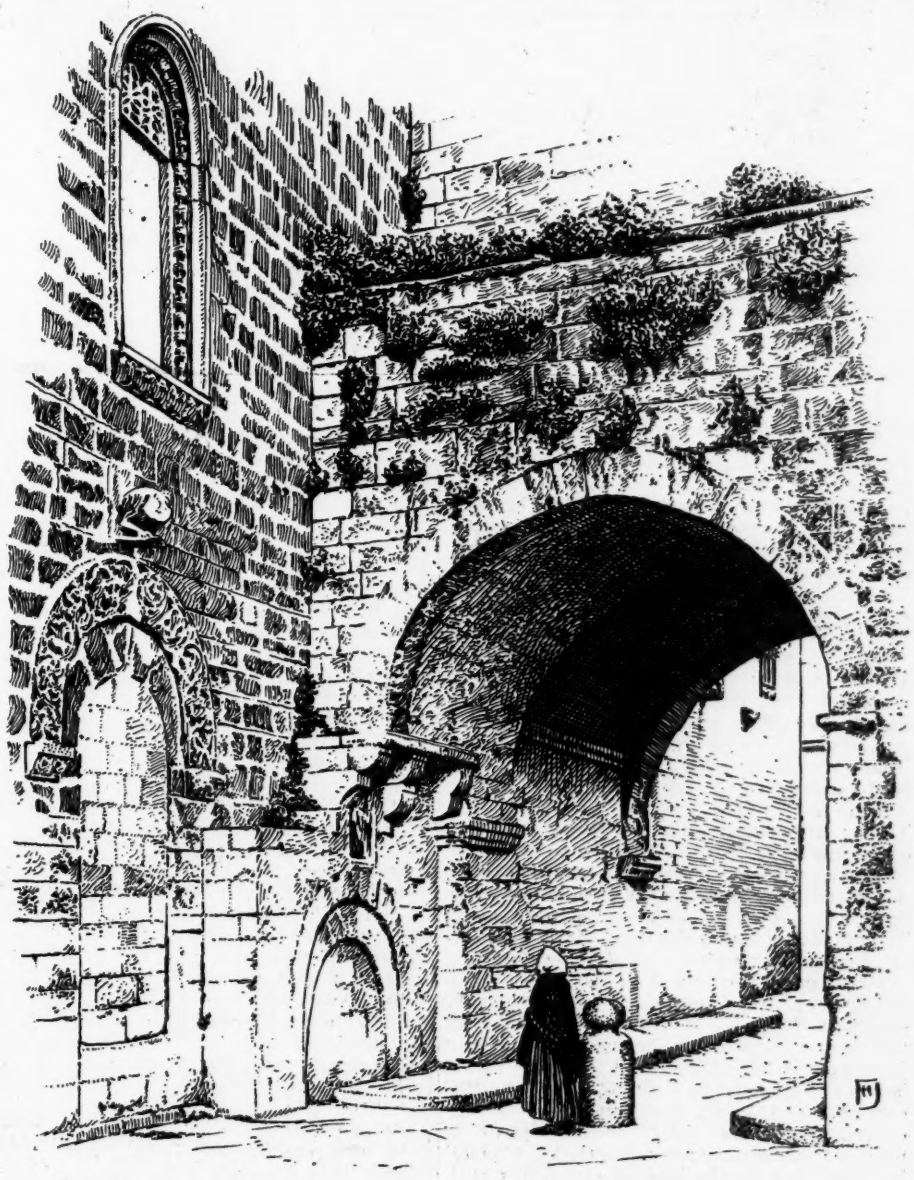


Fig. 2. Arch beneath Campanile, S. Maria Maggiore, Barletta.

Fig 3. Tomb of Bohemond, Canosa.

most ancient church in the Terra di Bari. M. Bertaux wrote in 1897 that the celebrated bishop's seat and ambo were put aside into a dark corner, while the nave had a gaping opening showing rough ends of vaulting, beneath which steps descended to the crypt; and this is still the condition of things. The seat shows considerable resemblance to that at Bari, and is older than the present church. It bears an inscription on the side :—"*Urso preceptor Romualdus ad hoc fuit auctor.*" Urso was archbishop of Bari and Canosa between 1078 and 1089. The seat rests upon two long-bodied elephants, which have arabesques on thighs, heads, and breasts. In front are two peacocks, and on the sides two griffins, flanked by heads projecting on a lower level. On this level the front has a central cross and scrolls at each side. Above each upright are ornamental balls. They are ornamented with narrow rows of diamond-shaped inlay. The top ball is surrounded by tall acanthus leaves and is carved like a fir cone. The wings and tails of the other beasts have been painted red at some time. The ambo is so much like it that it is generally considered that they must be by the same hand. It stands on high octagonal pillars. The curved projection in the centre has the usual eagle on a man's head, the head is cap to a pillar, and the projection is panelled, the book-rest projecting above the eagle on a lion's head. There is a round arch below with inlays and a little carving. The caps look very Oriental in design. The church has a fine pavement of marble also. It seems possible that the building is earlier than the received date. The seat of Ursus seems to prove that either there was another church here in his time or that the construction of the present church was considerably advanced. The outside of the nave walls shows a Byzantine mode of construction—alternate courses of stone and triple rows of bricks. The plan is nearly that of S. Mark's, Venice, the difference being that the fifth cupola is at the end of the nave instead of being east of the crossing. The cupolas have no drums, but rest directly on the columns, and M. Bertaux says that the only other group of cupolas without pendentives in Apulia is in the ruined church of S. Maria di Calena on the point of Monte Gargano, an early XIth century church. The cupola over the crossing has pendentives, it is true, but it was probably rebuilt in 1699.

Against the south side of the church the tomb of Bohemond is built (Fig. 3). He died in 1111 at Antioch, and his body was at first placed in S. Sabino. His mother, Albareda, built the sepulchre. It has a portico, which was covered with two pyramidal roofs terminated with balls, now removed. It consists of three thick pillars of violet marble with caps of white marble, two of them imitated from the Corinthian, while the third has a cushion cap decorated with vesicas. The chapel is rectangular, with an altar niche to the east. The external walls have shallow pilasters and an arcade of four semi-circular arches (to the south) with carved caps but no buses, though there is a base between them, in the second of which is the door. The east side has two arches, and the apse and the west side three arches. There is a little cornice and sloping roof up to a square base, from which the octagonal lantern starts. This has columns and caps at each angle, a little crowning cornice, and a cupola roof, replacing the pyramid which shows in the older drawings of the monument. The interior has two very small bays crossing each other, made by two round arches resting on three rough Pentelic columns with roughly-cut caps. The two first columns are a continuation of the portico, and suggest that it may perhaps have been originally a chapel or baptistery. The walls are plastered, and there is no altar now. The bronze doors are signed by Ruggiero of Melfi, who is also credited with the architecture. One leaf is wider than the other, as is the case at Augsburg. That on the left has three rosettes in the panels, which are divided by bands of elaborate ornament. In the highest was inlaid a Madonna and Child, as shown by the inscription. The middle one had a lion's head, and the lowest inlaid ornaments. Between them verses are engraved in praise of Bohemond. The right door has at the top and bottom roundels with ornament, birds, and beasts. The middle compartments contain two kneeling young men in the upper, and in the lower three fine male figures. In each case the lines are incised and the flesh was filled in with silver, which disappeared during the French occupation. The inside of the doors has the same inequality as the outside, one leaf having foliage in relief, while the other has none. The design of the ornament shows strong Oriental influence, and it is disputed whether Roger was a native of Amalfi or Melfi, and the fact that Molfetta also appears in chronicles as "Melfi" adds to the uncertainty. F. H. J.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE usual fortnightly meeting of the Royal Institute of British Architects was held on Monday evening at No. 9, Conduit-street, W., Mr. J. Belcher, A.R.A. (President), in the chair.

Deceased Member.

Mr. A. Graham, Hon. Sec., said he had to announce the decease of Mr. Francis Edward Caws, Past-President of the Northern Architectural Association. Mr. Caws passed the Associates' examination of the Institute, and was admitted a Fellow in 1893. He was the author of various contributions to the *Journal* on subjects of artistic and scientific interest in connexion with architecture. Mr. Caws was responsible for much architectural work in Sunderland and the neighbourhood, and designed and carried out the piers at Sea View, Isle of Wight, and the suspension bridge across the Wear at Stanhope. A memoir of Mr. Caws had been contributed to the Institute *Journal* by a Vice-president of the Northern Architectural Association. He had to move formally—and he knew it would have their tacit consent—"That the Institute do record deep regret at the loss of an esteemed colleague, and that a letter of sympathy and condolence be sent to his family."

Garden Architecture.

Mr. Mervyn Macartney then read a paper, illustrated by lantern views, on "Garden Architecture," of which the following is an abstract :—

The author said that scarcely any subject had been so exhaustively studied of late years as that of garden architecture, and heated controversies had been waged over the rival advantages of formal and informal gardens. At present the former held the field, and he hoped that in this case Fashion would prove constant. Citing some ancient instances of formal gardens, the author quoted at length the graphic description given by the younger Pliny of his villa garden, with its spaciously well-proportioned portico, in front of which was "a sort of terrace, embellished with various figures and bounded by a box hedge, from whence you descend by an easy slope adorned with divers animals in box, answering alternately to each other, into a lawn overspread with the soft acanthus ; this is surrounded by a walk enclosed with tonsile evergreens shaped into a variety of forms." Later, there were the formal and natural schools as represented by Lucullus and Martial, fighting the "battles of the styles" even thus early. The author confessed he could not see why, in the construction of a garden, human thought and labour should be eschewed. The most interesting examples were those on which the greatest skill had been expended. Not that the larger the amount of wall and terrace employed the better the result. It was possible to overdo these and produce

failure. In the case of Versailles there was a sense of enormous effort with little result. Vast terraces, lagoons of water, and huge fountains produced no satisfactory result, only a sense of futility, a useless expenditure of labour and money without adequate return. Turning to some English examples, the author said: "Montacute, to my mind, is the most satisfactory—it fits the position, and yet, like so many other English and British examples, it owes little to site. It is comparatively flat, and there is no distant view. What charms it has are of its own making. So it is with Wilton and Melbourne, and herein lies a difference from the Italian examples. They generally owe a great deal to position; perched on a hill you have vistas of distant country framed by towering cypresses into delightful pictures. Yet in the British examples you have a distinct sentiment; it is of a garden that you love—a charm that can only be gained by the employment of rare knowledge and design. There is a subtle charm about the terrace at Haddon Hall and the bowling green at Bramshill that is absolutely absent in Trentham or Versailles. There is no great striving after effect. I would rather be the designer of Montacute than Versailles—I will go farther, and say of the Haddon Hall terrace rather than Versailles. Indeed, there are few of the vast garden conceptions that please me. Chatsworth bores me, so does the Crystal Palace; yet they are laid out on grand lines—they are meant for spectacular performances, and unless all the fountains are playing the effect is dismal as an empty theatre." The gardens placed on hills give the architect an opportunity of showing his skill in designing terraces, balustrades, and steps. Some of these in the Italian gardens are wonderfully ingenious and beautiful. Water as part of the garden design was very largely taken into account by the Italians. Garden flowers were no part of the scheme, and scarcely came in at all. Architectural features and evergreen trees were the two principal factors in considering the effect to be produced. Antique fragments, such as vases, urns, capitals, altars, etc., were largely used, some as cisterns, others as receptacles for plants, etc. These were useful to lighten up the sombre depths of the ilex groves, and were suitable in that climate; but here they looked cold and unhappy. The author exhibited lantern views of various notable examples of Italian gardens to show what masters in their art and craft their designers were. Remarking on the essential differences between English and French, Italian and Spanish gardens, the author referred to the beauty of the English lawns. Abroad they could only be obtained by great care and attention, and are a source of trouble and difficulty. Shade, too, in those countries was of vital necessity. Here it rarely was the case, and many of the pergolas that people were so enamoured of were nasty damp places totally unfitted for the climate. A third point was the effect of strong sunlight and heat. A marble seat here was a very uncomfortable place to sit on. It was generally damp and cold, and therefore unsuited to our climate. The author next dealt in considerable detail with home gardens, showing examples of different ways of treating some of the many factors that make up the sum of an architectural composition—such as terraces, steps, etc. As regards the width of terraces, there is more chance of failure by putting a narrow terrace than a broad one. Generally speaking, the width is largely governed by the amount of surplus earth excavated from the foundations. If the site is a very steep one the terraces are usually narrow. Balustrades admit of much play of fancy. The turned baluster is very commonly used, and the author favoured the widely-spaced English work. Quaint terminals on the piers, and also pavilions at intervals and at the corners, are introduced to vary the monotony of lengthy balustrades. Montacute is a case in point; the play of fancy in this design is very happy. Other architectural details referred to and illustrated were gate piers, fountains, ponds, sun-dials, pavements. Summing up his own views on the subject, the author said that if he were called on to lay out an extensive garden site in England he should avoid geometrical beds—those unhappy compositions with shapes like tadpoles, kidneys, etc. Neither should he embark on topiary work on any great scale. Hedges of yew, privet, hornbeam, etc., were charming adjuncts to a garden, and here and there trimmed shrubs were useful; but he could not admire Levens, Elvaston, or Blickling. As our country is the most beautiful in the world, he would take advantage of every opportunity that offered of incorporating it into his scheme. Supposing he had not merely the laying out of the site of a garden, but also the choice of its position, he should not choose a lofty hill with a panoramic view. From the result of his experience he was certain that this was a mistake: foreground and middle and distance was wanted—human interest. Avenues of trees bordering a long stretch of water, as seen at Fontainebleau and Hampton Court, pleased him more than the terraces and beds of Versailles. One could not dissever oneself from one's climate; and though he vastly admired the superb cypress, ilex, and arbutus groves of Italy, he was as fond of our deciduous trees, even in winter. He did not care very much for the appearance of evergreens in England, except the yew and holly: their foliage had a hard metallic look that seemed to indicate that they were not happy in their surroundings. To his mind the detail, invented and perfected in this country, of terrace walks, balustrades, etc., was preferable to that of any other country. Further, he would avoid marble, as looking too white and staring. A very fair surface can be got in cement (concrete), provided too much sand and water is not used, and that it is not rammed down to well; otherwise, the sand and cement will come to the surface and show the lines of the plank strutting. Dwarf walls of brick laid dry assume an appearance of age very rapidly. The author's conclusion was that we have nothing to learn now from foreign examples, that we have enough in this country to guide us, and that the best are those which are not slavish copies of other lands.

Mr. T. H. Mawson, in moving a vote of thanks to the reader of the paper, said he felt that the paper and the examples showed how much there was to be learned from the study of gardens. He noticed one thing, which was that, whenever Penshurst, or any of the places to which the late Geo. Devey lent his great abilities were shown, his name was seldom given in connexion with them, and he was rather sorry that when the view of Penshurst was shown Mr. Devey's name was not mentioned, because he was a wonderful and charming designer. He would like to say one thing, which was that, in designing a garden, they must try to consider the matter from the centre rather than from the circumference, and they found that the centre really lay in their client. They had first to consider him and to humanise the circumstances with which they had to deal, so that they might accord with his requirements; and that the house and the landscape, being considered together, they could say one had been suitably received into the other. He was afraid there was some fear that in considering the garden rather from the point of view of detail than from the design in mass they lost what ought to be the chief characteristic of the design. He was perfectly sure that Mr. Macartney thought so, too, and that in giving so many details instead of plans and the larger conceptions connected with gardens he had in his mind the helping of the younger men of the profession. Still, they must first of all consider the garden in its larger aspect, and, having decided upon the composition as a whole, finish it in detail, and then they would arrive at a scheme which was good from the centre to the circumference. They must never forget that the first thing to consider was the opportunities which the site afforded, and that brought him to another point, especially in connexion with Montacute, where they were told there were no distant views. There the object of the designer was surely to create a world immediately around the house, but in other districts, and particularly in Windermere, where he resided, they saw much that was beautiful in nature on the one side and the house on the other, and what they had to consider was really the linking up of the two. Wordsworth was not only a great nature poet, but he had also much to do with the design of many of the gardens in Lakeland, and he had noticed that, whenever Wordsworth directed or advised in the design of a garden in this district, what he always tried to do was to weld the rugged and pastoral into one fine picture. In the case of Montacute they had to produce a world, but in the other case there was a world already existing, or a number of worlds, each one linked together. He felt that it was by taking the house as a fixed point on one side and the landscape on the other also as something fixed, and by welding together the two into a homogeneous scheme, that they would realise their best effect. He had seen one garden designed by Mr. Macartney, and he had realised far better than anyone else whose works he had seen how much there was to do in linking up the two, and it was owing to his having seen the satisfactory result that made him refer to the matter in this way.

Colonel Prendergast seconded the motion, and remarked that he was old enough to recollect when it was considered that when the last slate was put upon the roof the architect's business was ended. Nowadays they were asked to design a great deal more than that, and the subject discussed that night was one which must come before them if only times became better. It was rather a question of pounds, shillings, and pence what they did in the way of architecture or the architectural laying out of gardens. With regard to the paper, he must confess he was absolutely at issue with the author on the question of the geometrical laying out of land. Nature required no help from them, it was true, and would give all the charm and delight necessary, but geometrical laying out was absolutely necessary. He would ask them to go no further than Hampton Court Palace and see what Dutch William did there. William laid out the grounds which were now the glory of the Metropolis. They were not chucked here and put there as people did now who thought they could draw up anything without any rules or principles whatever. There was not an avenue at Hampton Court which was not carefully laid down on architectural principles. William did not act for his own period, and nature had filled up the gaps, and now they had one of the most enticing things of its kind on a very inferior site. He was sorry to differ from a gentleman who had done such service in bringing the matter before them, but he could not give way to that insular interpretation which had been put on these great subjects. He was aware that in that room they had had from the greatest of their architects a lack of appreciation of great buildings, and it was nothing new to him to find people who said that Versailles was not to be looked at. They had their own specialities in that little land, and they should make the best of them, but do not let them go about the world contending that nobody knew anything but themselves. He would like to know one thing. On the border of the Thames there was a place called Beaumont College, which was the house of the conqueror of India, Warren Hastings. He would like to know whether the garden of that house, to which allusion had been made, was the original garden of the period of Hastings or whether the allusion was to some new addition which had been made to that interesting house.

Mr. F. R. Farrow said that one thing occurred to him in regard to the architect's connexion with the garden, and it was that they seemed to forget that a garden was a place for growing things. He felt that their work as architects ought to be confined simply to the provision of the frame in which things might grow. If they adopted that as the basis of their work they should abstain from much of the formal cutting of hedges and distortion of nature into geometrical form, which he thought was one of the points that Mr. Macartney objected to. As architects he fancied their work would be done when they had laid down the general lines of the mass, and then they should turn to their friend Mr. Mawson and ask him what plants and shrubs should be planted in order to produce a succession of colour during the different months of the year, so that the garden might be not a joy for a short time, but for always. The architect had first to provide the frame and such adjuncts as might be necessary to complete that frame. In an English garden, which was very different from an Italian garden, they must have opportunities for shade and for shelter, and that gave an excuse to architects to put in summer-houses and arbours as part of the scheme in framing a garden. He agreed with the remarks of the author as to the introduction of sculpture in English gardens. Sculpture, to be of any effect in the form of single figures, must be more or less nude figures, and nude figures in white marble in an English garden against a background of dark green produced one of the most distressing effects one could possibly imagine. Therefore in laying out a garden he felt that sculpture was one of the things they should avoid unless they could induce their client to spend sufficient money

to build a loggia or museum in which to place the sculpture.

The Chairman said that with respect to gardens generally they afforded the architect opportunity for linking his work with nature. The rigid geometrical lines of architecture would come rather suddenly on nature left to itself, and the garden was the opportunity of pushing out the tendrils, as it were, and linking the building to the soil—the opportunity of softening the harsh lines and bringing them into unity with the more rounded and undulating forms of nature. Mr. Macartney had drawn their attention to one thing which he thought was important, and it was that architectural details in connexion with gardens should not be too refined, because they were not in scale with nature. There was great truth in that, and probably it had something to do also with the size of gardens, because it was all a question of proportion, and he felt that gardens should not be unduly extended or they would be out of proportion with the house. They simply wanted to link the house with nature, and the garden should not be extended too great a distance from the house. Another thing which occurred to him was the beauty and advantage of screening certain parts of nature. The quiet, retired beauty of an enclosed garden was known to most of them—the being able to have peeps from one screened part to another, and of being able to frame in certain beauties of nature. It was one of the difficulties architects had in dealing with their clients. It was a difficult matter to persuade the client that screening off of some portion of his garden was an advantage, for the client liked to see it all at once. Whereas the great charm was to see a portion at a time. He thought Mr. Macartney had been misunderstood in some respects with regard to his views on formal gardens, and he believed he was in sympathy with the formal garden up to a certain point.

The motion was heartily agreed to.

Mr. Macartney said with regard to Penshurst, he knew it very well, and he fancied that Lord de L'Isle had more to do with the design of the gardens than Mr. Devey. He believed that Lord de L'Isle wrote to Mr. Blomfield about the gardens being ascribed to Mr. Devey, and said that he was the author. As to Beaumont College, there were photographs of that in the room, and they were the work of Mr. Bentley. Colonel Prendergast had mistaken him about the laying out of a garden. He was quite in sympathy as to its being geometrical, but he did not like a carpet garden, and that was the point at issue. No doubt they were used largely in Italy because they had no flowers, but in England they had flowers. He knew that William Morris had something very pertinent to say about the laying out of a garden, and he was a man able to speak about the correct management of colour. Mr. Farrow alluded to the garden as being a place for growing things, and that was excellent, but the thing to do was to incorporate the surrounding country as far as possible, and have vistas. There was a great deal to be done by leading the eye from the immediate garden to the surrounding country. It need not be very extensive, but anything which gave them food for thought, and made it poetic, was always interesting. Mystery was always interesting, and this was achieved by the screening off of portions of the garden.

The Chairman announced that the annual general meeting would be held on May 1, when the annual report would be submitted for adoption, and other business would be proceeded with. The Council, at that meeting, would submit for adoption the Institute paper on the conduct of competitions, as revised by the Competitions Committee.

CHILDREN'S CONVALESCENT HOME, ST. ANNE'S-ON-THE-SEA.—The Children's Convalescent Home at St. Anne's-on-the-Sea, which has been built by Sir John Thursby, was opened on the 11th inst. The home is fitted up for ten boys and ten girls, and it has dormitories and a playroom. There is a frontage of 165 yds. to the high road. Mr. Thomas Muirhead, of Manchester, is the architect for the work.

FREE CHURCH HALL, WINWICK.—On the 6th inst. the new Free Church at Winwick was opened. The building will accommodate 200 people. It is built of red brick, with slated roof, and its dimensions are 50 ft. by 25 ft. All the woodwork is pitch-pine, with pitch-pine dado; the floor is composed of wood blocks. There is an entrance porch, vestry, and offices. Mr. G. H. Catley, of Bristol, was the architect, the builder being Mr. H. Fairclough, of Warrington.

BRITISH SCHOOL AT ROME.

THE third open meeting of the British School at Rome for the present season was held in the library of the School, on Monday, April 3, Professor Pelham, the President of the Executive Committee of the School, being in the chair. His Excellency the British Ambassador (Sir Edwin Egerton) was present, and the meeting was also attended by archæologists of our own and other nations, and by British residents and visitors to Rome.

Mr. Thomas Ashby, junior, the Acting Director, read a paper on Monte Circeo, the promontory which rises in solitary grandeur from the coast of Latium, which is otherwise flat and monotonous. It looks, indeed, from a distance like an island, and must have been an island once, but at a remote period, when the general sea level was considerably higher than it is now. Tradition, even in ancient times, made it the dwelling-place of the enchantress Circe, whose name it still bears; and Circe was certainly worshipped there—probably upon the highest peak, which rises to 1,775 ft. above the sea, on one side almost sheer, and has upon it ruins which may well be those of the substructures of her temple. At the time when this was the frontier of the dominion of Rome a colony was settled here (as one version has it, under Tarquinius Superbus, while the more accredited date is about the beginning of the IVth century, B.C.) as an outpost against the Volscians. The ruins either of this colony, or of a still earlier town, lie under the modern village of S. Felice Circeo at the eastern extremity of the promontory, the *enceinte* of which is built upon rough walls of so-called Cyclopean masonry; and these are, it seems, connected by walls ascending the mountain side with a citadel on the summit of the ridge, which is built in a rather more careful style—very fine Cyclopean work on the outside, the blocks lending towards rectangularity, and being finely jointed with dressed faces, though on the inner side of the wall the blocks are left comparatively rough, and are not well jointed. Such masonry is generally used for terrace walls, but here we have a rare instance of such a wall standing free, and, in order to give it stability, it increases in width considerably towards the base. The site of the Roman town at the end of the Republican period, however—whether it originally stood on the height or no—was to the north of the west end of the promontory, by the shore of a salt-water lake, used now, as probably in Roman times, as a fishery. Here are the remains of immense water reservoirs and other buildings half-hidden by the undergrowth. Several villas, large and small, are dotted over the promontory itself, and the wondrous beauty of the situation evidently attracted the Romans of the Empire—Domitian had, we are told, a villa there.

Mr. W. St. Clair Baddeley followed with a paper upon the ruins of what may well be a hitherto unknown temple in the neighbourhood of the villa of Hadrian, not far from Tivoli. In the south-east of the villa proper, upon a hill called the Colle di S. Stefano, are the remains of a group of buildings which have up till now been generally considered to belong to it, but which the evidence of the fragments of an important inscription recently discovered there proves to have been a separate and very large villa, belonging to the Vibii or the Plancii Vari, though contemporary with the Imperial villa hard by. Its importance is shown by the fact that immediately below it the ravine is crossed by an enormous viaduct, constructed, it seems, expressly for the use of this villa. Within its precincts is a small isolated building, rectangular in plan, with a rectangular niche opposite the entrance, which is reached by a flight of steps; and close to this edifice a small marble tablet was recently discovered and acquired by Mr. Baddeley, which bears the words LVCV SANCTV—sacred grove. The use of "sanctus" for "sacer," as applied to a grove, is uncommon, to say the least, and both the form and the phraseology of the inscription are of interest.

Plans and drawings were exhibited of several portions of this important group of buildings, which will certainly repay further investigation and study.

PUBLIC LIBRARY, YARMOUTH.—The new free library at Yarmouth, the gift of Mr. Andrew Carnegie, was opened on the 12th inst. The building has been erected from designs prepared by Mr. J. W. Cockrill, surveyor, by Messrs. Carter & Wright, builders.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

THE last meeting of the session was held at No. 18, Tufton-street, on the 12th inst., when Mr. A. N. Wilson read a paper upon "Village Churches."

He commenced by remarking that in these days of depopulation of rural districts an architect seldom had the opportunity of designing a village church in its entirety, and he trusted that the attempt now being made to get the people back to the land would remedy this state of things by creating a demand for more churches. The speaker then proceeded to trace the history of the village church from its earliest inception to the present day and showed how intimately it was bound up with the village life in the past, and he emphasised the point that, by taking an intelligent interest in such history, much good would accrue both in the work of the architect and his pleasure in carrying it out. For this, if for no other reason, he pleaded for such study from the archæological point of view. A suggestion, which in the ensuing discussion met with general acceptance, was that a record of the history of each church, both in writing and drawing, should be made and carefully preserved among the records in each diocesan registry, and this should be insisted upon by the bishops of the various sees. There were men who could read you the intimate history of a church after an inspection of the building as easily as if written on a printed page, and a compilation such as that suggested would make for a more general diffusion of knowledge, not so much of church history in general, but in an individual sense. Another suggestion, although purely speculative on his part, was the provision of the north door found in so many churches. This, he thought, might have been provided in view of the use, in former times, of the churches for purposes other than religious, and the consequent desire upon the part of the clergy to keep the secular meetings and spirit distinct from the religious, this door being too small for rubrical purposes and often built up entirely at a later date. The subject of seating was of more than archæological interest, for its date of introduction and partial use were instructive from the secular and religious point of view. Mr. Wilson sounded a note of warning in regard to the vexed question of restorations, and pointed out that, whereas an architect designing a new church could start unhampered, the restorer had to deal reverently with a storehouse of historical relics, and his fear of diminishing by the slightest degree the glamour was apt to turn him into a mere antiquary. This was a mistake, and an architect should, in his opinion, try to be "frankly modern" and not a slave to tradition. Future generations should read the history of this age as well as those which preceded it. Such questions as the provision of organs and vestries, heating, lighting, and seating were matters which now much occupied us, but which did not much trouble, if at all, our forefathers. He deplored the incongruity in the introduction into old village churches of the highly ornamented and coloured reredos so common in these days, and thought some simple hangings much more to be desired. He also regretted the want of religious atmosphere in modern work, and attributed it in great measure to the overlighting of churches. In conclusion, by means of sketches on the blackboard, he showed how a knowledge of the history of a building and the careful examination of it in detail led to the solving of what, without it, would have remained a perpetual enigma.

Mr. L. Ambler, who opened the discussion, proposed a hearty vote of thanks to Mr. Wilson for his fascinating paper, full as it was of historical research and put together with much literary skill. He quite agreed with Mr. Wilson in regard to the increased interest and good accruing from a careful study of church history from the antiquarian standpoint. He thought that the building of village churches was perhaps of not quite such rare occurrence as Mr. Wilson suggested, and, to instance this, he would mention the many colliery villages which had sprung up during the last few decades, and there were other industries and communities in addition growing up in various parts. He was not quite clear as to Mr. Wilson's remarks in reference to the desirability of being "frankly modern" in present-day design. It seemed to him that with present-day arrangements and planning one could not help being "frankly modern," even though one tried to emulate the spirit and tradition of the past; but he strongly deprecated the attempts at originality which

had recently been seen. The glamour of old work could only be obtained by age, he thought, and no amount of skill in design could effect this; he agreed with the reader of the paper as to the governing of planning by modern requirements, but he thought that suitability of a building with regard to its surroundings was too often lost sight of. As to the amount of light admitted to a church, he pointed out that architects usually designed the windows with a view to their being filled with stained glass, which would diminish the light considerably. Regarding seating and other wood fittings, he was of opinion that most of the architects of the last Gothic revival period made a mistake in attempting to design XIIIth century woodwork, of which there were few, if any, old examples. He thought that the use of arcading went a good way towards imparting an atmosphere of mystery, and it took off from the barnlike appearance of a building.

Mr. P. J. Turner, who seconded the vote of thanks, in a short speech said that the present prevalence of agricultural depression was to be regretted the most as it militated against the most necessary upkeep of the churches in country districts. As to Mr. Wilson's suggestion of compiling the history of the various churches, he was glad to say that he knew of one body—the Suffolk Archæological Society—which had taken up the subject whole-heartedly. He agreed with Mr. Wilson as regarded the amount of light in modern churches, and thought that the cathedral at Westminster was an example where it had been treated successfully. He thought that the use of an east window filled with clear glass was a mistake.

Mr. R. H. Weymouth said he believed in the help derived from the spirit of tradition, and as church history was a most powerful factor in upholding this, he strongly advocated a study of it, and he thought Mr. Wilson had no need to apologise for taking up the question of archæology in his paper. Personally, he believed in getting plenty of light into a church. A point which he believed most influenced planning to-day, and which did not trouble our forefathers, was one of cost of materials.

Mr. Mears differed from one of the speakers inasmuch as he knew of one church where the internal walls were treated with plain whitewash, and yet the interior was very satisfactory.

Mr. A. H. Belcher anticipated a more practical paper, but, after hearing Mr. Wilson, he was glad he had been disappointed. The paper had produced as an effect upon him the impression that restorations were at all costs to be avoided, and the building of an entirely new church advocated. He did not quite agree with Mr. Wilson as regarded the reredos question, as he knew of some successful examples.

Mr. H. Gregory Collins (Chairman) advocated a careful study of church history, for, whilst bearing directly upon the practical side, it took us away from office routine. As having reference to Mr. Wilson's "frankly modern" remark, he thought that Mr. Norman Shaw's church at Chiswick and Mr. T. G. Jackson's at Wimbledon were two excellent examples of buildings adapted to modern needs.

Mr. W. H. Seth-Smith, as Special Visitor, then summed up the discussion. In dealing with the historical side, he said he had been much charmed by Mr. Wilson's way of putting this before them and grateful to him for the practical manner in applying it. Personally, his life had been too busy to allow him to study archæology deeply, but he had always found great pleasure in dipping into it, and a book he could cordially recommend was Dr. Cox's "How to Write the History of One's Village Church." Referring to the modern side, he thought that the question of cost hampered us most, and had much to do with planning. The influence exercised by the bishops and the Ecclesiastical Commissioners also influenced the matter. Simplicity was certainly a principle to be aimed at, and he called to mind a small church near Blackheath which the Architectural Association visited lately, which he thought a successful example. He agreed with Mr. Ambler that the question of aisles and gangways was an important one, as giving character to a building, but the piers should not interfere with the view of the preacher. He believed that the question of heating and ventilation would more and more influence church roofing in the future, and quite rightly, as these were matters affecting the health apart from the comfort of the occupants. He thought the provision of a gallery in the west end desirable as securing good acoustic properties, and its staircase turret gave the architect a chance of making a feature of this part of the building. He quite agreed with Mr. Weymouth as to the desirability of using local materials, as it made for fitness to surroundings, and he believed that many valuable hints were obtained from a careful study of local work. He was also in agreement with him as regarded getting sufficient light for reading. In concluding, he advocated not a slavish copying of old work, but a study sufficiently careful to be of use in having to do with ancient or with new work under modern conditions.

The vote of thanks having been carried with acclamation,

Mr. Wilson in reply said that the point in his paper most requiring explanation was that having reference to his expression "frankly modern." What he really wanted to convey was that the aping of old work was too frequent, and he would like to see the same treatment applied to church design as had been done in our domestic work of to-day, which he ventured to think was second to none in the world. Mr. Wilson answered one or two other queries, and the meeting then terminated.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS:

VII.—Central Library, Hammersmith.

The concluding or seventh spring visit of the Architectural Association was made to the Central Public Library, at Hammersmith, on Saturday, the 15th inst. The building is the gift of Mr. Andrew Carnegie, and in a limited competition, assessed by Sir Aston Webb, the design of Mr. H. T. Hare was selected for erection.

Although the interior was found to be in an unfinished state, it was at once evident that the principal merit of the scheme lies in the excellent simplicity of plan. A central entrance leads directly into a large lending library, having a news room to the left and magazine and boys' rooms to the right. A simple staircase and landing, with a plaster vaulted ceiling, all sufficient for the purpose, gives access to the reference library and committee room on the upper story. The remainder of the accommodation consists of caretaker's residence, stores, and minor accessory departments.

The difficulty of the problem was to produce a building of the required areas for 10,000*l.*, the amount of Mr. Carnegie's gift, and with but slight excess, due to subsequent modification, the architect has succeeded in doing this. Some further change will, we think, be found necessary in the one very narrow entrance, which is to be choked by a patent revolving door. These fittings are useful enough in a hotel, but hardly suited to the demands of the busy entrance to a public library in a borough such as Hammersmith.

The lending library of 30,000 volumes, with its public space, is one large room, wherein the borrowers' counter measures 55 ft. long. The first floor landing and stack-room, which overhang this apartment, are carried by two lattice steel girders, 55 ft. in length, 10 ft. deep, and cased in breeze concrete 9 in. thick; columns are thus avoided in the lending library, which is a great improvement upon the original plans.

It cannot be said that the author of the design rises fully to the opportunity afforded by the breadth of the plan in the treatment of the main front. There is massive dignity in the wall surfaces in which the brick and stone materials are wisely kept distinct, but the pediments which emphasise the break at each end of this façade appear to be introduced with but little relation to the detail of other parts of the composition, and the effect of these imported features weakens the general idea which is otherwise honest and vigorous.

Some interesting carving and modelling by Mr. Schenck is to be seen both in and out of the building. The two external stone figures, representing Shakespeare and Milton, excellent of their kind, are, however, too large in scale and too realistic in treatment for the shallow niches which they affect to occupy.

Taken as a whole, the design of the library will do much to exercise a good influence upon the tastes and opinions of the residents in Hammersmith.

The Building Trades Exhibition.—We may remind our readers that the Building Trades Exhibition, to be held in the Agricultural Hall, will be opened by Lord Windsor on Thursday next, the 27th inst.

THE QUANTITY SURVEYORS' ASSOCIATION.

An ordinary general meeting of this Association was held on Wednesday, last week, at the Freemasons' Tavern, Great Queen-street, W.C., Mr. Walter Lawrance, President, in the chair.

The minutes of last meeting having been read and confirmed, and the Council's list of nominations for officers for next session having been read, the following gentlemen were appointed to act as scrutineers on the occasion of the ensuing election—*i.e.*, Messrs. G. A. Ovitts, C. A. Kennett, and C. D. Nixon.

Mr. A. G. Cross, F.S.I., then read a paper, entitled, "The Practice of Our Profession and Suggested Reforms."

The author divided his paper into two parts. Part I. was entitled—

A Plea for a Uniform System of Measurement in England.

His object, he said, was to indicate some of the more cogent reasons for the introduction of a uniform system of the measurement and valuation of artificer's work, as the science of quantity surveying was formerly called, and to elicit the views of members thereon so that they might be in a position to frame some practical suggestions for further consideration by the Council of the Association, should this course be considered desirable. The main differences which exist between the Northern system and the London one appeared to be the neglect on the part of those who practice the former to measure many items of labour which most certainly should be embodied in a bill of quantities, to their custom of merely making an item, or, as we should say, "an allowance," for some important labours which should either be numbered or measured. He had seen the following item in a bill of quantities for a building costing upwards of 150,000*l.*: "Allow for building in or cutting brickwork around the ends of all iron and steel joists, built, box and lattice girders, ends of roof trusses, etc.," and to their separation of, in many cases, the labour from the materials, although on this last point they were not consistent.

The length of a bill of quantities supplied by an architect or surveyor practising in the North country was frequently the subject of comment, and one would naturally inquire why, when the work was not measured so much in detail as in one supplied by a London surveyor, should such an imposing document be produced? Probably an explanation was to be found in the fact that in many instances the bill of quantities served also as a specification, and the consequent necessity of separating the work very considerably in order to inform the builder where the materials and labour, of which the quantities were given, were to be used, rendered the repetition of many items imperative.

In an examination of a bill of quantities prepared by a North country surveyor, and on comparing it with a similar document issued from a London office, one was (besides the omission to measure many items of labour) chiefly struck by the following methods of measurement which appeared therein:

The measurement of the labour to hollows in brickwork and plastering.

The deduction of the brickwork in the flues and the measurement of them by the foot run for "labour forming," the number of flues cored and parged being also given.

The Northern system of measurement of the carpentry and joinery differed in many instances materially from the London system, the separation of the labour from the materials in the measurement of the floors and roofs, measuring the former by the yard super., as "Labour and Nails" or "Labour Framing," and the latter by the foot cube, was unknown in the London practice. The labour framing for the roof trusses was numbered, the extra labour trimming for an opening was numbered, and in the cube timber in the roofs was included rafters, purlins, hips, ridges, roof trusses, and curved ribs, and the labour framing to hips and valleys measured by the foot run. Very little labour was expended in the measurement of a staircase, the number of steps, their length, width of tread and rise being given and the wall and outer strings included in the description. The measurement of the founder and smith's work hardly varied from the London method, and although a London surveyor would condemn the neglect to measure the labours on the lead, such as welts, bedding flashing, and copper nailing, and the inclusion of all bends and

joints (including branch joints) in the length of the lead pipes of any diameter up to 2 in., this also applied to the plumber. A London quantity surveyor would also comment on the absence from the painter's bill of any reference to "frames" and "squares," both sides of the windows were measured all over and billed by the yard super. for the painting.

A comparison of the bills of quantities issued by several of the leading London quantity surveyors revealed many important variations in *their* customs, and leads one to consider whether previous to the encouragement of the extension of the London method it was not desirable to make *that* system uniform. To name a few only of the items appearing in a bill of quantities upon the mode of measurement of which the views held by some surveyors differ materially from those held by others, there was in the first place the question of the measurement of stonework. As they were all aware, some quantity surveyors still adhere to the practice of measuring the labours upon Portland, Doulting, Bath stone, etc., whilst others merely did so on the Portland stone, and measure other stone including all labours. Again, the system of measuring all stonework irrespective of its description as "stone and labour," was favoured by many surveyors, some of whom bill their stone in one item, and some separate the items as "cube stone" in "plain quoins," moulded "cornices," etc. There was much to be said in favour of a continuance of the old-fashioned and, in his opinion, the best system of measuring all the labours; there could be no doubt that by this means the fairest price was obtained by the builder and paid by the employer; it was more easily billed, and the confusion caused to some estimators by a surveyor's endeavour to separate his items of cube stone and labours so as to make the work on every feature sufficiently clear was avoided. On the other hand, it was contended that sufficient time was seldom allowed the quantity surveyor to take off the quantities, and that the adoption of any system which tends to minimise his labours was to be recommended; there was, in addition, a good deal to be said for an argument he had frequently heard expressed—*i.e.*, "Why should I take the trouble to measure a stone front in the orthodox manner when my neighbour merely measures the work by the foot cube, and is in consequence enabled to get through considerably more work in the course of the year than I, with a result equally satisfactory both to the architect (who is, as a rule, absolutely indifferent on this point) and to the contractor?"

The practice of billing the rough brickwork as so many rods reduced brickwork, including all rough cuttings and rough arches, was becoming only too common, and here the difficulty of a contractor arriving at a fair charge for the cuttings was apparent. Rough cutting, according to most authorities, was priced by the superficial foot, and birdsmouths and squints by the foot run, and in the absence of the necessary information on these points the contractor had to guess at the amounts and include in his estimate a sum which would, in his opinion, cover the cost.

Mr. Cross then gave an example upon which the method adopted by those present that evening would, he said, certainly vary—*i.e.*, in regard to the measurement of glazed brick facings. "What is regarded as the custom? Do the majority of quantity surveyors simply take the sight measurement of the area covered by the work and allow nothing for bonding in at the internal angle, or is it the general custom to measure an additional 4½ in. by the height of each internal angle and include this in the super.? My own practice is to measure the height of each angle by the foot run, and to bill it as 'extra on best quality white glazed facing to internal angle for bonding.' The foregoing instances of the varied systems practised by London quantity surveyors could, of course, be very considerably increased. I have, however, I think, given you enough examples to convince you all that the London practice, although infinitely superior to any other, is neither perfect nor uniform.

It is a very difficult matter to convince a professional body, more especially those members who are, by reason of their seniority, recognised as its leaders, that any reforms are essential. I do not suggest that anyone of our leaders would maintain that the system which he adopts is the only correct method and is not capable of improvement (he would, indeed, be a bold man who would venture such a rash argument), but I do suggest that he would argue that his methods have lasted his time and served him very well, and that his bills of quantities differ in mere matters of detail only from those issued by his contemporaries. I believe, however, that a large majority of quantity surveyors would be willing to give the most careful consideration to an inquiry whether the time has not yet arrived when some endeavour to reconcile the differences which exist in the method of measurement adopted in the bills of quantities issued by one surveyor from those issued by another should be made.

Is it not our duty to provide a recognised London system of measurement which all of us would adopt, and upon which our examinations would be based, previous to any endeavour to make that system uniform throughout England? My own view is that this object would best be attained by the publication by our Association of some regulations for the measurement of the materials and labour in the various trades similar to that pamphlet issued by the Glasgow Institute of Measurers, and I have one more argument to use in favour of such a publication. In view of a recent decision upon a question as to the manner in which a bill of quantities had been prepared, some amendment to Clause 12a in the Conditions of Contract (where quantities form a part) issued by the R.I.B.A. has been suggested, it is, I understand, proposed to insert the words "or omission from," so as to make the clause read as follows:—

"Should any error appear in 'or omission from' the bills of quantities other than in the contractors' prices and calculations, it shall be rectified, and such rectification shall constitute a variation of the contract, and shall be dealt with as hereinafter provided."

To my mind, the insertion of those three apparently inoffensive words opens up a fine field for arbitration and litigation, as the question "what constitutes an omission from the bill of quantities?" will very frequently arise.

Upon the question what constitutes an omission? opinions will vary very considerably, the neglect to tinise the rake of a roof, thereby dividing the amount of slating, boarding, battening, etc., by two, is definite and unanswerably an "omission from" a bill of quantities. On the other hand, is the neglect to measure certain items of labour which many quantity surveyors *would* measure an omission from the quantities? Possibly as good an illustration to explain my meaning as any I can give is the question of the measurement of an internal angle in glazed facing work.

A quantity surveyor acting for the builder would claim to have the additional 4½ in. up each angle included in the measurement, and his contention would meet with the support of some leading members of our profession who adopt this course, whilst his opponent would argue that the actual sight measurement only of the surface covered should be measured, that he has done so, and that the builder has no claim for an extra by virtue of an "omission from" the quantities in respect of this item. In the absence of any recognised system of measurement to which reference should be made on all questions in dispute, by whom are questions such as the foregoing to be decided?"

Suggested Reforms.

In the second part of his paper Mr. Cross dealt with reforms in the employment and payment of the quantity surveyor. He said:—

"The system under which a quantity surveyor is paid for his services to my mind stands greatly in need of reform. The practice (almost universal in the case of private works) of a quantity surveyor's being paid through the builder is one, the wisdom of which is very much open to question, and is probably a survival of the time when he was *employed* by the builder frequently without the knowledge of the architect, and in nearly every instance without the knowledge of the building owner. A quantity surveyor, whether employed direct by the building owner or by the architect as his agent, is virtually also an agent for the owner, and why in the one case the fees are paid by the owner and in the other by the builder has never been clear to me. The desirability of payment direct is also urged by the Institute of Architects, who state in their schedule of charges, 'when an architect takes out and supplies to builders quantities on which to form estimates for executing his designs he should do so with the concurrence of his client, and it is desirable that the architect should be paid by him rather than by the builder, the cost of such quantities not being included in the commission of five per cent.' It is a matter for regret that this point was not considered by the Council of the R.I.B.A. when their conditions of contract were revised a few years ago, and the Clause (No. 13) providing for payment of the quantity surveyor's fees amended so as to bring it more in accordance with the view expressed in the schedule of professional charges from which I quote.

As the nature and extent of the work done by the quantity surveyor becomes better known his direct employment by the building owner will probably become the rule rather than the exception, and it is the hope of those who were instrumental in forming this Association that by giving greater publicity to our profession this object would be attained. It is now the general custom in London (and also to a great extent in the provinces) for public bodies, such as Borough and Urban District Councils, Boards of Guardians, Education Committees, and so on, to employ quantity surveyors direct, making the appointments under seal, and entering into a contract with the quantity surveyor under which he accepts full responsibility for the accuracy of his work, and to this course, as a general principle, no one can, I am sure, demur; there are, however, two points in connexion with it upon which some reform is, in my opinion, needed.

(1) As to the mode of making these appointments. We occasionally see advertisements in the professional papers from public bodies inviting quantity surveyors to send in tenders for taking out the quantities for works which they contemplate erecting, indeed, for works of any magnitude this is rapidly becoming the rule, and a more undesirable system it is impossible to conceive. The natural outcome of its adoption is that the lowest tenderer frequently gets appointed without any inquiry as to his qualifications and experience, a course which is alike unfair to the architect, who (although in many cases not consulted on the appointment) is surely entitled to some assurance (when he is appointed architect) that the quantity surveyor with whom he is to be associated is properly qualified and has had some experience in the preparation of the quantities for buildings of a similar character, and to the quantity surveyor, who after spending many years of his life learning his profession finds that his sole chance of obtaining work for public bodies is by underselling his neighbour, a course which is hardly likely to commend itself to a conscientious man who would regard the friendship of his brother professionals as too valuable to be jeopardised by its adoption. The fairer course for a public body to adopt, and this is occasionally done, is to fix the rate of remuneration to be paid themselves, and then invite quantity surveyors to apply for the position, stating what experience they have had in similar work, and to send testimonials, and to this I am sure no one can object (if the percentage fixed is not an absurd one), as the 'underselling' to which I refer is avoided, and quantity surveyors are not invited to quote for the supply of their professional services as a founder would be for the supply and delivery of cast-iron pipes. In addition, this system would assure the architect's having a quantity surveyor of experience to work with, and the ratepayers would have the satisfaction of knowing that the services of the most experienced man available have been obtained on their behalf.

(2) As to the contract into which the quantity surveyor enters when appointed. Except in the case where the public bodies in question have large building works on hand, such as the London County Council, the Asylums Board, and some others, which are in the habit of frequently employing a quantity surveyor, there is, as far as I am aware, no recognised form of contract which would be applicable here, and for each separate appointment which a quantity surveyor may receive a contract has to be prepared more often than not drawn up by the clerk to the employer, who is generally utterly unacquainted with the peculiarities and details of our very special work, in which the surveyor's responsibility is defined, and which document as a rule contains some stringent clauses which operate rather more favourably to the employer than to the quantity surveyor. Although I do not suppose there is a practising quantity surveyor in any position who would be unwilling to accept the fullest responsibility for the accuracy of his work (the fact that this Association, with its Clause 13 of the Articles has already a large and rapidly increasing members' roll, is sufficient evidence of this); still, I think you will agree that some recognised form of contract for the employment

of quantity surveyors by public bodies should be in existence.

With regard to the first point I raise—*i.e.*, the method of appointing a quantity surveyor and the tendency on the part of public bodies to invite tenders—it is very difficult to formulate any scheme which should be adopted in order to remedy the existing evil, particularly in a short paper such as this dealing, unfortunately, in a very superficial manner with two such important subjects. Except by approaching the Local Government Board as I suggest hereafter, I personally know of no way in which we can control the action of those public bodies which are so blind to their own interests as to pay such inadequate fees for work of a highly responsible character, and I am afraid the only remedy for this method of inducing professional men to undersell each other lies with the professional men themselves.

In connexion with the erection of a public building to defray the cost of which application for sanction to a loan is made to the Local Government Board under the Public Health and other Acts, the work of the quantity surveyor is far more responsible and important now than it was in years gone by. Formerly an architect employed by, say, a Burial Board to design a cemetery chapel employed his own quantity surveyor, whose fees were included in the builder's tender and paid by him in the then usual manner, the extras and omissions were adjusted by the quantity surveyor on the completion of the building, and the accounts presented by the architect to his committee, which had in many cases no knowledge that a quantity surveyor had been employed.

In the erection of a building at the present day, say, for instance, a technical school, it, in the first place, often happens that a competition amongst architects is held, and here the quantity surveyor's services are occasionally required in making approximate estimates of the cost of erecting the building in accordance with two or three designs which the committee have selected for further consideration before making a final decision. It is often the quantity surveyor who prepares an estimate of the cost of the building upon which sanction to a loan is obtained from the Local Government Board, and this (at least, this is my own experience) is frequently made before the quantities are prepared. After the quantities are taken off and a tender is accepted for the erection of the building in question, the quantity surveyor is frequently employed to advise the committee upon the cost of any additions or alterations it may contemplate, and to prepare an approximate estimate on which to obtain the sanction of the Local Government Board to a further loan. The issue of certificates for progress payments is also becoming to be regarded as more within the province of the quantity surveyor than the architect, and on completing the measurements of the extras and omissions and effecting a settlement with the builder, it is often he and not the architect who presents the final accounts to the committee and explains how, when, and why the excess expenditure which many items involve has been incurred.

Finally (I speak more particularly of work for those public bodies whose accounts are audited by a Local Government Board and not by elected auditors) a quantity surveyor is often required to attend before the official by whom the audit is held to explain any point which may arise in the accounts of a building with which he is connected, an investigation from which, of course, no competent quantity surveyor would shrink. It must not be understood that I suggest that any of the duties which I have enumerated as being those which a quantity surveyor may be called upon to perform are those which should properly be rendered by anyone else. I have enumerated them solely in order to emphasise my point—that a quantity surveyor's duties and responsibilities have practically doubled within the past generation and his remuneration has apparently been halved.

In view of the fact that many thousands of pounds of public money are paid annually to contractors, in some cases on our certificate, in others on the certificate of the architect advised by the quantity surveyor, it is inimical to the public interest that the system of inviting tenders for professional services by their representatives should continue, and for this reason alone, I think, representation to this effect should be made to the Local Government Board, as far as I am aware, the only department which exercises any control over Municipal and Poor Law expenditure. It appears to me desirable that power should be conferred so as to enable that department to stipulate when sanctioning a loan to defray the cost of any public building that the quantity surveyor employed should be one of whom the Board would approve, and as some members of a profession allied to ours and also practised under the comprehensive name of surveyor are appointed or licensed to act as arbitrators by the Board of Trade under the Arbitration Act, so in our case those quantity surveyors who are employed on work involving an expenditure of public money should be licensed to act in that capacity by the Local Government Board.

In order to give any effect to the suggestions I have made, it is in my opinion essential that a schedule of professional charges of quantity surveyors be issued under the sanction of the Quantity Surveyors' Association. There is, as far as I am aware, no scale of fees adapted to our practice in existence, with the exception of the rates of remuneration arranged between His Majesty's Office of Works and other Government departments and their quantity surveyors, and between the London County Council and the quantity surveyors whom they employ. These are, however, I presume, private scales of fees arranged between the respective bodies I mention and the individual quantity surveyor, and would be no evidence in support of a quantity surveyor's claim to be paid the 'customary' charges. There are, I admit, many objections made to the suggestion that a scale of charges applicable to the quantity surveyor's profession should be issued, amongst them possibly the three most serious, certainly the three most important that I have ever heard expressed, are these :—

(1) That a scale of fees published by our Association or by any body claiming to represent the interests of quantity surveyors would not be binding in law. Certainly it would not, and I do not suppose that any of us here to-night contemplate that it would. I think, however, that we might reasonably anticipate that a scale of fees issued by the Council of a representative body comprising among its members many of our leading quantity surveyors would in future become to be regarded as the 'customary' scale.

(2) That it is difficult, if not impossible, to arrange a scale of fees that would be satisfactory, inasmuch as a percentage that would be remunerative for one building would be the reverse for another, and that no two, or certainly no ten, quantity surveyors could be found to agree upon the question of adequate remuneration for preparing the quantities of buildings of the varied character which in the course of the year pass through the quantity surveyor's hands. This difficulty does not appear to have been insurmountable in the instances to which I have previously referred—viz., the various Government departments and the London County Council. Surely, if it has been possible to agree upon a scale which can apply to all the various buildings erected by these bodies, it would be equally possible for us to agree upon one which should apply to all buildings upon which we may be engaged.

(3) That if the Council of our Association were to publish a scale of fees our members would not adhere to it. This is an argument that can, I think, be dismissed as unworthy of serious consideration. Although in these days of keen competition it is certainly difficult to maintain a high standard of professional etiquette, there are, I am convinced, few, if any, of our members who would not be prepared to make some sacrifice, should the issue of a scale of fees involve any sacrifice, in order to improve the status of our profession.

I have now given the principal reasons that I have ever heard expressed against the issue of a scale of fees together with my own answers to them, and I believe that the advantages which will ultimately accrue to our profession by adopting that course far outweigh the disadvantages. The system adopted by the R.I.B.A. in fixing a uniform commission as applicable to all cases is one which, in my opinion, might well be improved on. As an alternative, I would suggest that the charges for preparing quantities be based upon a sliding scale, both having regard to the class of building upon which we should be engaged and its estimated cost—that is to say, for buildings of the domestic class costing up to, say, 5,000*l.* a certain rate per cent. and for a building of this class costing more the same rate up to 5,000*l.* and a reduced percentage on any expenditure above. Again, for warehouses and similar buildings costing up to, say, 5,000*l.* a lower rate per cent. than in the case of domestic buildings and a sliding scale for any expenditure above that amount. I would suggest similar sliding scales for churches and chapels, hospitals, etc., schools, and public buildings based on their cost.

In conclusion, I should like to explain that this paper has been written more with the object of inviting discussion upon two subjects certainly, in my opinion, worthy of it, than of formulating and publishing any new and original ideas. Many of the suggestions contained herein have been made before, indeed, as regards the desirability of our adopting a uniform system of measurement, thirty-three years ago a special committee upon the employment of surveyors reported in favour of the extension to country work of the system of measurement usual in London, and, again, in one of the earlier editions of the late Mr. John Leaning's book on quantity surveying (published some five-and-twenty years ago) he states that 'there is much need that the duties, obligations, and charges of the quantity surveyor should be authoritatively formulated, and this could best be done by the Institute of Surveyors, and that the steps which that body has already taken are well calculated to effect this result.'

Although I have no wish to belittle the excellent work done and the excellent results in other directions obtained by the Surveyors' Institute (to which I am proud to belong), it is clear to me, and, I think, to us all, that quantity surveyors must not look to that body for much assistance and support in the direction indicated by Mr. Leaning, and the steps which he told us were five-and-twenty years ago being taken appear since then to have been retraced.

It must be remembered that only a very smal percentage of the members of the Surveyors' Institute are quantity surveyors, and its Council would wisely and reasonably argue that to give any special support and assistance to a comparatively small section of their members would probably be adverse to the interests of the majority who practice other professions, and for this reason alone the interests of our profession are safer in the hands of a distinctive association with a council possessing power to act as they deem right in the interests of its members and elected *by* its members, all of whom are quantity surveyors."

Mr. A. J. Gate proposed a vote of thanks to the lecturer for his exceedingly interesting and instructive paper. In the course of his remarks, Mr. Gate said that, as to the advisability of making quantities uniform, he saw no difficulty in making them uniform in the United Kingdom, but that in the Colonies it was not possible to make quantities uniform with the quantities here. In England he believed that matters would gradually right themselves if surveyors did one thing—*i.e.*, use the London system wherever they sent their quantities. That was his practice, and he found provincial builders not only liked that, but wished they could get quantities drawn in that way in their districts. But there were differences between the quantities of London men, and if the London system was to be generally adopted in the provinces, some of the best points of other systems would have to be included. Until that was done, those in the provinces could fairly object to adopt the London system, and if they wanted to make quantities uniform they must make their system as perfect as possible. As to taking the labours on stonework, the practice to some extent was being given up. The first object of quantities was to give a builder what he wanted in such a shape that he could price them—to give the builder all the items that he wanted to enable him to price. Nowadays, when the labours were taken, some builders asked to be excused from pricing. He should strongly object to the issue of any book or pamphlet of instructions as had been suggested. There had been one or two books published on quantities already, and people who got hold of them thought they were able to take quantities after reading them. They did not learn, but they did a lot of harm to the profession. As to omissions from the quantities, they must be errors in spite of what a learned judge said. An omission was as much an error as if one only took off half of an item. He was in favour of the quantity surveyor being appointed by the owner, and one-half of his work was done under that system. The client knew what

were the services he received and he knew exactly what he paid for. As to quantity surveyors underbidding one another, the Association was not idle in the matter, and they had spent considerable time in endeavouring to draw up a minimum scale of charges below which members would be asked not to tender. But the matter was a difficult one to deal with.

Mr. S. Chatfeild Clarke seconded the vote of thanks, and said he rather agreed with Mr. Cross as to the issue of the pamphlet he proposed. He did not mean that the Council should issue a book telling people how to measure, but one laying down generally the lines which quantities should follow would be a good means of getting a uniform practice throughout the country.

On the motion of Mr. W. R. Hood, F.S.I., seconded by Mr. H. England, the discussion was adjourned until the next, the annual general, meeting, in May.

The vote of thanks having been agreed to, as well as a vote of thanks to the Chairman, the proceedings terminated.

THE ROYAL SANITARY INSTITUTE.

ON Saturday, the 8th inst., the members of the Royal Sanitary Institute held a sessional meeting in Bristol. The visitors included medical officers and engineers from a number of West of England towns, and prior to the business session at the Guildhall they were received by the Lord Mayor (Mr. E. B. James) at the Council House.

The Lord Mayor, in offering the members a cordial welcome, said he did so the more heartily because he believed that the Institute was a most useful and beneficial agency in promoting the health and well-being of the people. The statement of one of their founders, Sir Henry Burdett, seemed almost incredible, that so short a time ago as 1876 the majority of hospitals had no plans of their drains, and that the mortality in the best hospitals after serious surgical operations was 37·8 per cent., and not only were the houses of the poor improperly drained, but many of the Government offices, and even Royal palaces. Now all this was changed, thanks in some degree to the influences brought to bear on public opinion by their Institute. In visiting Bristol the Institute had come to a city with a long historic record and one of great antiquity. Of Bristol at the end of the Stuart period Macaulay wrote:—"A few churches of eminent beauty rose out of the labyrinth of narrow lanes built upon vaults of no great solidity. If a coach or cart entered these alleys there was danger that it would be wedged between the houses, and danger also that it would break into the cellars." All this, he was glad to say, had been changed, and, although they had to sacrifice some of the picturesqueness of their city, their broad thoroughfares and open spaces compared favourably with any other ancient city which had had to be transformed and adapted to modern requirements, and, thanks to their excellent sanitary committee, he thought that they could claim that Bristol was one of the best-kept cities in the Kingdom.

Mr. Whitaker, Chairman of the Institute, said they must not forget that, with all its improvements, Bristol had also many valuable specimens of antiquity which were carefully taken charge of.

At the Civil Court of the Guildhall the sessional meeting was subsequently held.

Mr. Whitaker explained that that was one of the provincial meetings that had been held of late years, and which had the double advantage of interesting country members, and of bringing London members into the country. In the present year a number of such gatherings would be held in various large cities. The speaker also referred to the scheme for extending the headquarters of the Institute in London, and commended it and the work generally to financial support.

Isolation Hospitals.

Dr. Davies, Medical Officer, Bristol, opened the morning's discussion, the subject of which was "Isolation Hospitals." He said it was useless to hide the fact that, although Bristol was the sixth largest town in England, it was not adequately furnished with isolation hospital accommodation. The reason that Bristol had lagged behind was this: Through the complaisance of the Guardians the onus of dealing with epidemic disease continued to rest upon them until 1894, when they revolted. Thereupon seventy-six beds at Ham Green for fever and a small establishment at the Novers Hill, mostly temporary, were provided by the year 1899, but in the meantime the city population had increased by more than 100,000 persons, and thus the available beds, even when they reckoned in twenty-two temporary beds for diphtheria at Clift House, became again inadequate, and did not indeed fully replace the accommodation formerly provided by the Guardians. Towards supplying this deficiency a new block at Ham Green, that they were invited to inspect, had been supplied by the Health Committee as a substantial instalment, and the consideration of the rest of the scheme for the provision of hospital accommodation was still engaging the committee's serious attention. Dr. Davies concluded by moving a dual resolution, which was subsequently recast in one read as follows:—"That this meeting is of opinion that the opposition to hospital isolation accommodation arises from the lack of appreciation of the essential conditions that contribute to its success, and therefore urges that the provision of such accommodation for large centres of the population is imperative, and regards one bed per 1,000 of the population as a good working minimum."

Mr. Yabbicom, the City Engineer, followed with a paper on the isolation hospitals provided by the Corporation at the Novers and Ham Green. In speaking of the transformation of the old mansion at Ham Green into an administration block, he said that such adaptations are seldom very satisfactory, and it was soon found necessary to increase the accommodation by building a new annex containing four dormitories for servants, thirteen bedrooms for nurses, with workroom, storeroom, and other offices. The medical officer is accommodated in the oldest portion of the house, capable of complete isolation, with a sitting-room, study, dispensary, two bedrooms, bathroom, etc. The matrons' rooms, nurses' dining hall, and recreation room are on the ground floor of the newer part of the mansion, the bedrooms being on the first and second floors and in the new annex. The hospital buildings now consist of seven blocks built in late Gothic style, in red brick with freestone dressings. The observation ward, electric lighting, stabling, ventilation, and heating and drainage were described, and it was explained that the number of beds for patients now provided in all the buildings at Ham Green are as follows:—Four pavilions of 17 each, 68; one pavilion of 51, 51; two observation pavilions of 8 each, 16: total, 135. A mortuary has been provided where the body can be seen without the risk of infection from a small room provided with a glass window. When a patient is sufficiently recovered to be restored to his friends and his relations he is passed through the discharging block. The establishment has been designed in the City Engineer's office, and Mr. Yabbicom, in concluding, acknowledged the very great assistance that had been rendered by his chief architectural assistant, Mr. H. W. Harding, and many others in his department.

Dr. H. Jones (Medical Officer of the Hereford combined districts) said they had been struck with the utterly inadequate accommodation for isolating infectious disease in Bristol. In many cases the sufferer from infection was isolated in a spare room of his home; the city isolation hospital was the working man's spare room. Dr. Jones said that in designing buildings at moderate cost they had not much help from architects.

Dr. Howard Jones (Medical Officer of Newport) seconded the resolution.

Dr. Martin (Medical Officer to the Gloucestershire County Council) said that, with regard to infectious hospitals, he thought it extraordinary there should be such an enormous difference in the cost per bed; he saw that it varied from 160*l.* per bed to 500*l.* He thought it might be an advantage if, for certain purposes, the local authority—the County Council—was the sanctioning authority instead of the Local Government Board. The cost of buildings sanctioned by the Local Government Board was sometimes prohibitive.

Mr. R. Read (City Engineer of Gloucester) thought Mr. Yabbicom seemed to have provided Bristol with a very good hospital.

Dr. Tubb Thomas (Medical Officer to the Wiltshire County Council) remarked that if a rich and ancient city like Bristol had not yet provided sufficient accommodation, one could hardly expect poor rural districts and agricultural counties could be more advanced. In his county they might be said to have advanced beyond Bristol. They had considerably more than two-thirds of the county sufficiently provided with accommodation, and he hoped in a short time they would get the remainder of the county supplied. There seemed a general feeling that the requirements of the Local Government Board and the Lunacy Commissioners made the cost of building too high.

The resolution having been put and carried, the Chairman proposed thanks to the Lord Mayor and Corporation and to Mr. T. J. Moss-Flower, who, as local secretary, had done much work in arranging that meeting.

The vote was cordially agreed to.

Mr. A. P. I. Cotterell, in moving a vote of thanks to the Chairman, remarked that the doctors had talked so long that they had not given the architects a chance of replying to the criticisms.

Mr. Bird (Radstock) seconded the vote of thanks, which was agreed to.

The afternoon was spent in visiting Ham Green.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Mr. A. E. Cornwall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend Woolwich Borough Council 8,500*l.* for electric lighting purposes; Poplar Borough Council 30,013*l.* for paving purposes; Battersea Borough Council 5,237*l.* for provision of a footway, etc.; Bethnal Green Borough Council 10,000*l.* for pipe sewers; Camberwell Borough Council 1,650*l.* for the purchase of property for lodging-houses; Finsbury Borough Council 6,300*l.* for contribution towards Goswell-road improvement; Hampstead Borough Council 4,869*l.* for paving works and 11,482*l.* for erection of lodging-houses; Hammersmith Guardians 2,250*l.* for poor law purposes; and Paddington Guardians, 10,000*l.* for poor law purposes. Sanction was also given to the following loans:—Chelsea Borough Council 5,000*l.* for paving works; and Islington Borough Council 750*l.* for pipe sewer construction works.

Survey of Non-Provided Schools.—On the recommendation of the General Purposes Committee it was agreed, after discussion, that a payment of 1,000 guineas be made to Mr. T. J. Bailey, the Architect to the Education Department, for his services in connexion with the survey of the non-provided schools.

The Education Committee brought up a report, covering 225 pages of the agenda, giving the result of the survey of non-provided schools which, under the Education Act, are maintainable by the Council. Four hundred and thirty-eight non-provided schools have been dealt with, sixty-four of which are stated to be in a very good state of repair and require but few alterations to render them quite fit for the purposes of elementary education. About 25 per cent. of the schools are considered unsuitable, and the various reasons for this opinion are set out in the report. "The staircases in many buildings are positively dangerous in the event of fire and panic, and are besides very inconvenient for the work of the schools. Again, ventilation and warming are in very many cases either very bad or quite inadequate for the needs of the children. Closed stoves, which easily get red hot, are particularly numerous, and should in all cases be replaced by modern grates with brick flues. The smoke from these is usually carried off by an iron pipe, and in many instances these iron pipes are very faulty. In several instances ventilation is secured only by opening both windows and doors with resultant draughts and serious inconvenience to the scholars. The offices and sanitary arrangements have received our special attention, and the requirements to be made upon the managers to remedy the defects discovered will, we think, commend themselves to the approval of the Council."

There are ninety-two schools which, in the opinion of the Committee, it will be necessary to close at once and twenty-nine departments of other schools which are unsuitable. The total number of departments which are, in the opinion of the Committee, unsuitable for the purposes of elementary education is 229. The following are some of the reasons given by the Committee for these conclusions:—

"A. The premises are inconveniently arranged for

school purposes and are in a dilapidated condition; the floors are considerably out of level and the walls are out of plumb.

B. The buildings are old and much out of repair; there are several settlements in the walls; the bricks are soft and the stone perishing.

C. The building is in a very dilapidated condition; the walls are bad, and all the stone work has perished beyond repair; the roofs are bad, and the floors are very weak.

D. The premises are very dilapidated, and are extremely awkward and inconvenient; there are no proper sanitary arrangements.

E. The building is dangerous in case of fire or panic.

F. The lease of the school expires in eleven years. The general arrangement of the premises is cramped and inconvenient.

G. The premises are held on lease with nineteen years to run. The boys' school is under the church four steps below street level, and is badly lighted. The girls' and infants' departments occupy a two-storey building on the south side of the church. These rooms are low, the class-room being only 9 ft. 9 in. high.

H. The buildings are so badly and flimsily built that it would be better to build a new school in the adjoining field belonging to the school than to spend money upon them.

I. The school has been formed by dividing the original building (a church) into two storeys; the staircase is of stone, is narrow, and the stairs are winders. The roof leaks. There is no emergency exit. The offices are inadequate, and there is no playground.

J. This is a three-storey building adjoining a coach-builder's and smith's yard; height of rooms, 10 ft. 6 in. and 10 ft. 3 in. There is only one staircase, and no emergency exit. The offices have formerly been used as a stable, and the caretaker lives over them.

K. The exit from the school is very bad, and great risk is occasioned by the position of tortoise stoves in middle of school-rooms. The cloak-rooms are bad; there are no lavatories, and the premises are very dilapidated and practically require rebuilding.

L. The Board of Education will not recognise the school later than September, 1906. The class-rooms in boys' department open directly into the street; the position of offices is bad. The infants' class-rooms are under the chapel, and the general structural condition is bad.

M. The school is under a church floor, and is some feet below the pavement level; the height of the school-room is only 11 ft. 4 in.; the offices are practically in the building, and as there is no playground it is impossible to build them elsewhere."

As to the drains of the non-provided schools, they are generally in a very bad condition.

"No fewer than 342, or 78 per cent., of the school drains tested have been declared unsatisfactory; 89 failed under the water test, 30 under the smoke test, and 218 under both. The work of testing these drains has been one of considerable difficulty. Instructions were given for the drains of each school building to be tested, and as in many cases one school is housed in two or more buildings this has rendered necessary many more separate tests than there are separate schools. In 26 cases the managers have refused to allow tests of any kind to be made, and it will be necessary for the Council to decide upon the action to be taken in regard to its decision of November 8, 1904. In seven cases the water test was objected to, although the smoke test, etc., was allowed."

The consideration of the Report was adjourned.

School for Mentally Defective Children, Peckham.—It was agreed to erect a senior boys' school and a junior mixed school for mentally defective children on the Basing-road site, Peckham; that expenditure not exceeding 9,054*l.* be sanctioned, and that the work be carried out by the Works Committee.

Site for New Offices.—A long discussion then took place on a Report by the Establishment Committee as to the purchase of a site for new offices for the Council, at a cost of 600,000*l.*, on the south side of Westminster Bridge. The Committee recommended that a site should be acquired for the erection of a County Hall on the south side of the river, near Westminster Bridge, and having an area of just over five acres, with a western frontage of 800 ft. to the River Thames. On the basis of 150 superficial feet to each officer, the building which it is proposed to erect will accommodate 2,589 officers, and 61,790 sq. ft. will be available for storage purposes. The estimated cost of acquiring the site is 600,000*l.*; the estimated cost of the building, foundations, etc., 1,056,000*l.*, and the estimated cost of the necessary embankment 44,000*l.*; or a total, exclusive of furniture and fittings, of 1,700,000*l.*

After the rejection of two hostile amendments, the Committee's proposals were carried.

Fire Brigade Stations.—On the recommendation of the Fire Brigade Committee it was agreed—

"That expenditure not exceeding 20,345*l.* be authorised in connexion with the erection of the proposed Cannon-street fire-station.

That expenditure not exceeding 13,080*l.* be authorised in connexion with the erection of the proposed new Brixton fire-station.

That expenditure not exceeding 9,560*l.* be authorised in connexion with the erection of the proposed Hernehill sub-station."

In each case the work is to be offered to the Works Committee, but in the event of their not being prepared to undertake the work at the amount of the architect's estimate, tenders are to be invited from selected firms.

Housing.—The Housing of the Working Classes Committee reported as follows:—

"We report that Valette-buildings, Jerusalem-square, Hackney, which consist of a five-story block of buildings, have been practically completed. . . . The dwellings, which have been erected for re-housing some of the persons displaced through the widening Mare-street, Hackney, contain accommodation for 416 persons in 39 tenements of two rooms, 34 tenements of three rooms, and seven tenements of four rooms. Accommodation for the remainder of the persons displaced in connexion with the improvement has been provided in Darcy-buildings, London-fields, which were completed in June, 1904.

In continuation of previous reports on the subject of the displacement of persons of the working class in connexion with the re-development of private property, we desire to call attention to the clearance which is being effected in Barnsley-street, Collingwood-street, Somerford-street, and Tapp-street in the Metropolitan Borough of Bethnal Green. We are informed that 51 houses, comprising about 200 rooms, are already, or about to be, demolished, and that the displacement of about 370 persons of the working classes is involved. New dwellings, which will contain 343 rooms, are being provided on the site, so that the accommodation on the area will be considerably increased in consequence of the rebuilding operations and the clearance of a practically insanitary area effected.

We are also informed that in the Metropolitan Borough of Southwark 57 small houses in Sterry-street, Myer's-place, Providence-place, and Fisher's-buildings have recently been demolished. The site lies on the east side of Tabard-street, and the houses contained about 144 rooms, occupied by about 280 persons of the working class. The clearance of the site was desirable from a sanitary point of view, and the property is now to be let on building lease."

Holborn to Strand.—On the recommendation of the Improvements Committee, it was agreed:

"That, in connexion with the provision of advertisement offices for the *Morning Post*, the offer of Mr. W. Harbrow to erect at a cost of 702*l.* 10s. a temporary iron building be accepted, and that the Improvements Committee be authorised to arrange for the execution of the necessary works to adapt the front portion of the ground floor of the existing *Morning Post* premises."

Working-Class Dwellings.—It was agreed to erect working-class dwellings on the Brixton-hill site, Lambeth, and to submit the working drawings, etc., to the Works Department.

Bridges.—The following recommendations of the Bridges Committee were agreed to:—

"That the plans for the proposed widening of Charing-cross railway-bridge, submitted on behalf of the South-Eastern and Chatham Railway Company by the engineer of the company under the provisions of the South-Eastern and London Chatham and Dover Railway Companies' Act, 1900, be approved, subject to the condition that if the Council so require during the execution of the work, or subsequently, the screen between the public footpath and the railway shall be backed by match-boarding of the same height as the screen, namely, 6 ft.; and that this approval shall not be, and shall not be deemed to be, an approval under section 26 or any section other than section 22 of the above-named Act.

That the plans submitted on behalf of the London, Brighton, and South Coast Railway Company, showing the widening of the bridge carrying the London, Brighton, and South Coast Railway over Prince of Wales'-road, Battersea, be approved."

London Building Acts Amendment.—The Building Act Committee recommended, and it was agreed, that a copy of the memorandum by the Chairman of the Building Act Committee on the subject of the London Building Acts (Amendment) Bill, 1905, be sent to each member of the City Corporation and the metropolitan borough councils, and that copies be also sent to such of the other authorities concerned as may desire to have them.

Additions to, and Withdrawals from, the Selected Lists of Contractors.—The following recommendations of the Education Committee were agreed to last week:—

(*a*) That the names of the under-mentioned firms be added to the list of contractors selected to be invited to tender for the erection of new schools and additions to schools:—Galbraith Brothers, 46, Camberwell-green; W. H. Lascelles & Co., 121, Bunhill-row; H. Lovatt, Limited, Darlington-street, Wolverhampton; L. Whitehead & Co., Limited, Portland Works, Portland-place North, Clapham-road; F. T. Chinchen & Co., Berens-road, Kensal-green; T. G. Sharpington, Mackell-road Works, Kimberley-road, Nunhead.

(*b*) That the names of the under-mentioned contractors be added to the list of contractors selected to be invited to tender for structural alterations, repairs to school buildings, etc.:—W. Eyre, 22, Great Chapel-street, Westminster; F. J. Gorham, Point-hill, Greenwich; Aldridge & Son, 78, Harlesden-road, Willesden-green; C. Johnson, 25, Dalling-road, Hammersmith; T. G. Sharpington, Mackell-road Works, Kimberley-road, Nunhead; A. Leather, Riverbank Works, Wandsworth; T. Lapthorne & Co., High-street, Lambeth; Grace & Marsh, 79, Tamworth-road, Croydon; Mattock & Parsons, 165, Gray's-inn-road; H. Bragg & Sons, 19, Robsart-street, Brixton-road; Crabb & Sons, 38 and 40, Upper Tulse-hill; A. Kendall, 39, Bloomfield-road, Burdett-road, Bow; C. R. Price, 145, Church-street, Stoke Newington; H. Willmott, The Triangle, Hackney.

(*c*) That the names of the under-mentioned contractors be added to the list of contractors selected to be invited to tender for repairs to buildings, etc.:—W. Gray & Co., 76, West India-dock-road; J. Barton & Co., 122, St. John's-street-road, Clerkenwell; J. Shelbourne & Co., 70, Fenchurch-street and High-street, Putney; W. Reason, Rosebery-avenue; W. Young, 1, Apsley-road, South Norwood; J. Martin, French, & Co., 3 and 6A, Warwick-place, Maida-hill; J. Scott Fenn, 42, William-street, Woolwich; Langdon & Clark, 3, Grosvenor-road, Ilford; W. H. King, 39A, Inville-road, Surrey-square; C. Leather & Sons, 114, Merton-road, Wandsworth; G. Kirby, Queensland Works, Holloway; T. Wilson, 6, Old Gravel-lane; J. Knight & Sons, 24, Gertrude-street, King's road, Chelsea; F. Chidley & Co., Limited, 56, Lydford-road, Paddington.

(*d*) That the name of Mr. W. Harbrow (works adjoining South Bermondsey station) be added to the list of contractors selected to be invited to tender for the erection of brick structures and partitions.

(*e*) That the name of Messrs. C. Leather & Sons, of No. 14, Merton-road, Wandsworth, be added to the list of contractors selected to be invited to tender for the erection of iron buildings and brick structures.

(*f*) That the names of the under-mentioned firms be added to the list of contractors selected to be invited to tender for heating works:—W. Richardson & Co., Darlington; John Jeffreys, 11, Old Queen-street, Westminster; Bolton, Fane, & Co., 298 and 300, Goswell-road; Russell & Co., 42, Berwick-street, Oxford-street; J. Jones & Sons, 66 and 67, Shoe-lane; A. Ritchie & Co., 12 and 13, Upper Thames-street.

(*g*) That the names of the under-mentioned firms be added to the list of contractors selected to be invited to tender for sanitary and drainage works:—E. Tabor, Cam-road, Cambridge; Davey & Roberts, 222A, Vauxhall-bridge-road; R. Harding & Son, 75, Arodene-road, Brixton; Crabb & Son, 38 and 40, Upper Tulse-hill.

(*h*) That the names of the under-mentioned contractors be added to the list of contractors selected to be invited to tender for cleaning and painting schools:—J. J. Richards, 9, Shannon-grove, Brixton; R. Harding & Son, 75, Arodene-road, Brixton; J. Knight & Sons, 24, Gertrude-street, King's-road, Chelsea.

(*j*) That the names of the under-mentioned contractors be added to the list of contractors selected to be invited to tender for providing and fixing iron staircases:—Geo. Mills & Co., Radcliffe, near Manchester; Peirson & Co., 17 and 18, St. Dunstan's-hill, E.C.; A. Ritchie & Co., 12 and 13, Upper Thames-street.

(*k*) That the name of Messrs. W. Sugg & Co., Limited, of Vincent Works, Regency-street, Westminster, be added to the list of contractors selected to be invited to tender for supplying and fixing gas mains and fittings.

(*l*) That the names of the under-mentioned firms be removed from the lists of contractors selected to tender for works in connexion with L.C.C. schools:—E. W. Richbell, R. Redfern, J. Bower, H. C. Gray & Son, G. Bell, J. Sloper & Co., J. Williams & Sons (Cardiff), Limited; Mrs. H. Evans; Enness Bros. (name removed from cleaning and painting list only); H. Runham Brown.

Buildings—Repairs to—Printed Schedule of prices.—The following recommendation of the same Committee was agreed to last week:—

That the offer of Mr. C. J. Jerrard, the contractor for executing repairs to schools in groups 4 and 6 (Greenwich district), to undertake, temporarily, the work of executing repairs to schools in groups 1, 2, 3, and 5 (Greenwich district), at an addition of 5 per cent. to his present contract schedule of prices for (*a*) measured work, (*b*) sanitary work, and (*c*) day work, pending the acceptance of fresh tenders for the execution of the work in the whole of the county, be accepted.

The Council adjourned shortly before nine o'clock for the Easter holidays.

ARCHITECTURAL SOCIETIES.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—The annual meeting of this Society was held in their room, Leopold-street, on the 13th inst., Mr. T. Winder presiding. Mr. C. B. Flockton was elected a Fellow of the Society. The treasurer's statement of accounts and the auditors' report, which showed a satisfactory increase of the balance in hand to last year, was adopted, with thanks to the auditors. The annual report of the Council, which showed a membership of 120, being the highest number in the Society's record, was read and adopted. It was announced that Mr. W. C. Fenton, in consequence of increasing public duties, wished to be relieved from the office of Secretary, which he had held for eight years, and a special vote of thanks was accorded him for his excellent work. A ballot was taken, and the follow, ing gentlemen were elected officers:—President-E. Holmes; Vice-President, W. C. Fenton; Treasurer, F. Fowler; Secretary, J. R. Wigfull. Council:—Past-Presidents, Messrs. E. M. Gibbs, C. Hadfield, R. W. Fowler, Jos. Smith, P. Marshall, T. Winder. Fellows:—Messrs. H. Coverdale, W. J. Hale, J. B. Mitchell-Withers, H. L. Paterson, A. E. Turnell, and C. B. Flockton. Associates:—C. M. Hadfield, C. F. Innocent, and H. J. Potter. A prize of 5*l.* 5s. for the best set of measured drawings was awarded to Mr. J. M. Jenkinson. The Society's prize for the best work in the designing class was awarded as follows:—1*l.* 1s. each to Mr. G. R. Bower and Mr. J. R. Truelove, and 10s. 6d. to Mr. D. H. Loukes. A hearty vote of thanks was accorded to the President and Council for their work during the year.

YORK ARCHITECTURAL SOCIETY.—In the York Museum Theatre, on the 13th inst., a meeting was held under the auspices of the York Architectural Society, when a paper was read entitled "Some Notes on Classic Art," by Mr. Wilfrid J. Milburn. The chair was occupied by Mr. G. Benson. Assyria was the first and greatest nation of antiquity with whose early efforts of art they had to deal. The building materials in Assyria were a great factor in determining the art of

this nation. M. Botta and Sir Austin H. Layard were the most notable discoverers of the ruins of the cities, and no fable of hidden treasures or wealth had half the romance that the story of the indefatigable labour of those men had. When digging, Layard unearthed notable "finds," but the greatest was the discovery of the human-headed bulls or lions. Probably of all the Assyrian masterpieces, the most famous was that of the wounded lioness, the expression of face being very fine. Of Egyptian art great finds had been heard of recently, and passing on to Greek art, which came to full perfection under Phidias, it might be said that the most famous representation of the goddess Athene was the large statue made by Phidias. The Olympic games and their celebration were a great festival in Greece, and the sculptors were able to see the finest models. The speaker showed many slides illustrating his subject, and at the conclusion of the lecture a vote of thanks to Mr. Milburn, proposed by Mr. A. Pollard, and seconded by Mr. Parker, was accorded by acclamation.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—At the evening meeting, on the 12th inst., Mr. C. H. Compton, V.P., in the chair, Mr. Emanuel Green exhibited a fine example of a moneyer's weight, of bronze, Portuguese, of about A.D. 1600, and equivalent to the weight of 3*l.* 12s. of our coinage. Dr. W. de Grey Birch exhibited an Egyptian vase of terra-cotta, supposed to be of about 5,000 years B.C., also a very elegant vase from Cyprus, of about 1,500 years B.C.; both are of the character known as libatory vessels. Mr. C. Dack, of Peterborough, read a paper on "Folk and Weatherlore of Peterborough and the District," in continuation of one upon the survival of old customs in Peterborough read by him some few years ago. Peterborough being situated at a point of junction of the four counties of Northamptonshire, Huntingdonshire, Cambridgeshire, and Lincolnshire, forms, as it were, a centre for so many sayings that it becomes difficult to make a selection; Mr. Dack, therefore, confined his account to those proverbs he had himself heard quoted in Peterborough and within a radius of twelve miles round, and the folk and weatherlore he had learned from old and young by word of mouth. In the local proverbs Peterborough is almost always associated with pride, from pre-reformation days even to the XXth century.

COMPETITIONS.

HAMMERSMITH BATHS AND WASH-HOUSES.—In a report circulated on Tuesday the Baths and Wash-houses Committee of Hammersmith Borough Council state that designs for the erection of baths and wash-houses have been received from the six competing architects, and are now under consideration.

SCHOOLS, PRESTON.—The following is the result of the recent competition (open to Lancashire architects) for new Council Schools in Roebuck-street, Preston:—(1) Mr. Herbert Howarth, Morecambe (50*l.* premium); (2) Mr. A. Brocklehurst, 30, Brown-street, Manchester (30*l.* premium); (3) Mr. F. Quentery Farmer, 36, Dale-street, Liverpool (20*l.* premium).

Illustrations.

MEMORIAL HALL, MASSACHUSETTS STATE HOUSE, BOSTON.

THIS illustration shows the interior of the Memorial Hall in the Massachusetts State House, at Boston, U.S.A.

Mr. Charles Brigham is the architect. The design, as will be seen, is entirely composed of long-accepted and orthodox classic details, but they are put together and used in a refined and suitable manner, and produce an apartment which should have a dignified and stately effect.

The illustration is reproduced from one which appeared in the *American Architect*. We have arranged with the editor of that publication that we should be at liberty now and again to reproduce an illustration of an important new building in the United States from his pages, by way of more easily giving our readers an occasional example of recent American architecture; it being exceedingly difficult to induce American architects to send drawings or photographs of their works across the sea. Mr. Flagg's kindness in sending his Naval Academy illustrations the other day was quite an exceptional case.

THE CHAPEL, KING EDWARD VII. SANATORIUM.

THIS building is being erected through the munificence of Sir John Brickwood, and is designed on a unique plan as an *open air* chapel. It is V-shaped, with a nave for men and another for women, and the chancel centrally situated at the apex of the V. The whole of the one side is entirely open to the south, and protected on the north, west, and east and with an open cloister on the south and open side as protection from the weather.

There is an outside pulpit, which can be used in very fine weather.

The heating is a novelty in this country; the heating pipes being *under* the floor, and the floor itself being warmed and giving off the heat. The outside of the buildings is of red and grey bricks and Bath stone, with local red tile roofs, the woodwork being of oiled teak.

Internally, the walls are lined with stone, and the ceilings plastered, and floors of stone and marble.

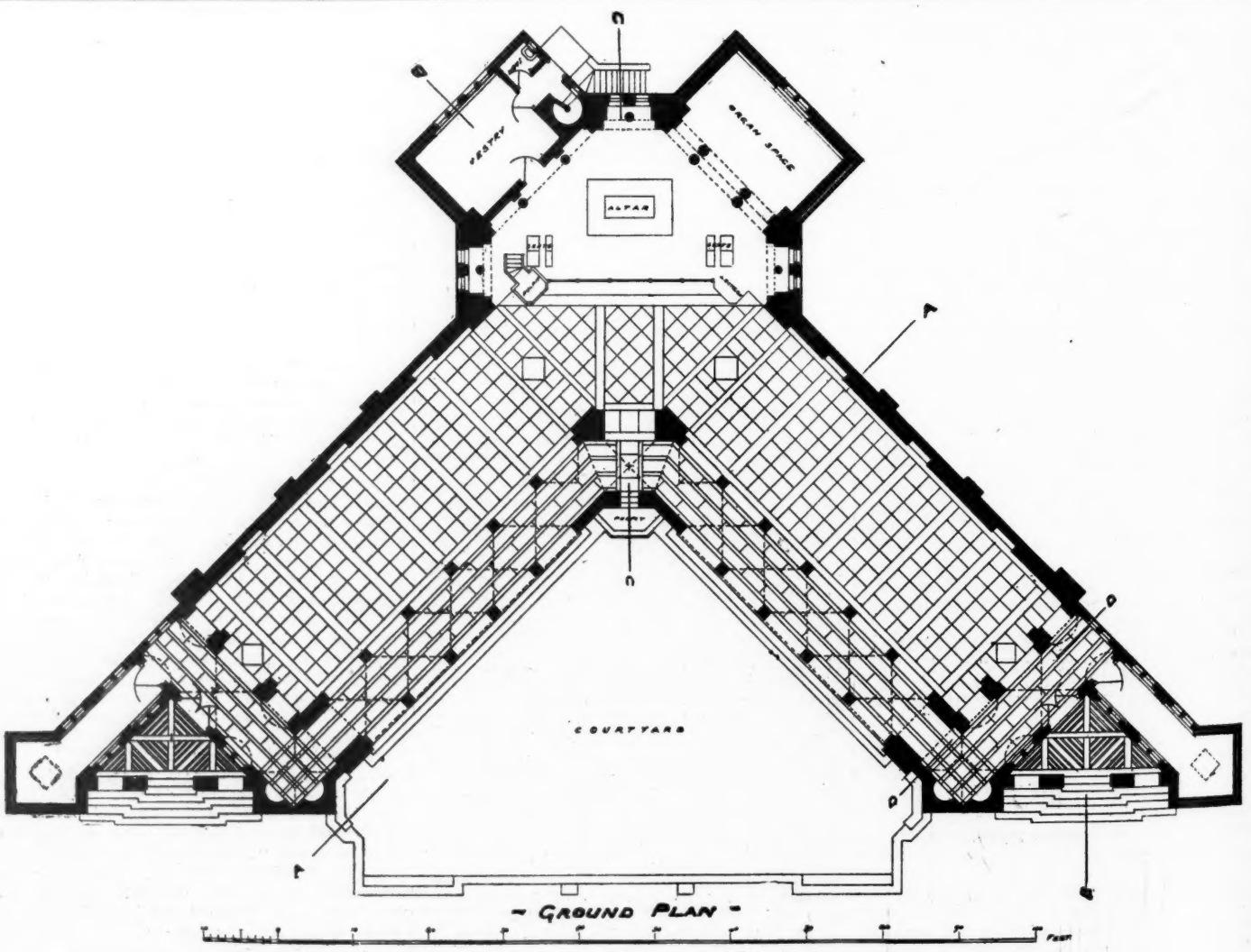
The builders are Messrs. Longley, of Crawley, who are carrying out the whole of the other work; and the architect is Mr. H. Percy Adams, F.R.I.B.A. (not "Percy H. Adams," as accidentally given on the title of the plate).

BUILDINGS IN DUNEDIN, NEW ZEALAND.

THESE illustrations are reproduced from small photographs, to accompany the article "Notes in New Zealand," which appears in the present issue.

The following are the titles to the subjects on the plate:—

A.—Town Hall, Dunedin.
B.—St. Joseph's Roman Catholic Church and Convent.
C.—Corner of High and Prince's Streets (looking up High-street); the Cargill Monument in the foreground.
D.—The High-street in 1863.
E.—The First Church, Dunedin.
F.—The Law Courts.
G.—The Hospital.



Chapel, King Edward's Sanatorium. Plan.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Erection of Buildings on Low-lying Land.

Woolwich.—That Mr. Cook be informed that the Council will take no action with regard to the non-compliance with the condition as to the time within which the buildings were to be erected, contained in the licence, granted to Mr. T. H. Driver, for the erection of 106 buildings at Marmadon-road, and eight buildings at Church-manorway, Plumstead, provided that such buildings be erected within eighteen months from March 25, 1905.—Agreed.

Erection of Shelters over the Proposed new Entrances to the Royal Institute of Painters in Water-colours and Prince's Restaurant.

Strand.—Two iron and glass shelters to the Royal Institute of Painters in Water-colours and Prince's Restaurant on the south side of Piccadilly (Mr. E. R. Robson for the Royal Institute of Painters in Water-colours).—Consent.

Lines of Frontage and Projections.

Norwood.—Ten houses on the northern side of Auckland-hill, Norwood, westward of No. 32 (Mr. J. W. Stevens for the executors of Mr. T. R. Apps).—Consent.

Hampstead.—An iron and glass porch at No. 23, Lyndhurst-road, Hampstead (Messrs. C. Saunders & Son for Mr. A. H. Curnick).—Consent.

Peckham.—An additional story to a one-story addition at the rear of No. 62, Queen's-road, Peckham, to abut upon Burchell-road (Mr. E. J. Strevens for Mr. R. J. Wade).—Consent.

Marylebone, West.—Bay-windows and balconies at Loudoun-mansions, Marlborough-road, St. John's Wood (Mr. P. Hoffmann for Mr. W. H. Dunn).—Consent.

Strand.—Two projecting signs at Nos. 1 and 1A, Cockspur-street, and Nos. 18 and 19, Pall Mall East (Mr. H. Tanner, jun., for the International Navigation Company).—Consent.

Wandsworth.—Sham half-timber work and a projecting porch to a detached house on the east side of Larpent-street, Putney (Mr. C. F. Depree for Messrs. J. & S. Sampson).—Consent.

Chelsea.—A projecting illuminated sign to the pilaster on the east side of No. 13, Brompton-road, Chelsea (Mr. W. Graves for Messrs. Slaters, Ltd.).—Consent.

Lewisham.—The retention of a greenhouse on the projecting one-story shop at No. 373, Brockley-road, Lewisham (Messrs. C. Hayward & Co).—Consent.

Marylebone, West.†—A one-story addition to No. 16, St. John's Wood-road, St. Marylebone, to abut upon Cunningham-place (Mr. F. Cooper for Dr. W. Davis).—Refused.

Norwood.—Houses on the south side of Ferndene-road, east side of Poplar-walk, and north side of Haredale-road, Herne Hill (Messrs. R. Ellis & Son for Mr. R. A. Sanders).—Refused.

Wandsworth.—Houses on the north side of Hazlewell-road, Putney, to abut upon Campion-street and Larpent-street (Mr. J. Coleman).—Refused.

Width of Way.

Hampstead.—A boundary wall to the playground of the New End school, Hampstead, at less than the prescribed distance from the centres of the roadways of Murray-terrace and New End (Mr. T. J. Bailey for the Education Committee of the Council).—Consent.

Strand.†—A building at No. 114, Wardour-street, to abut upon Ship-yard (Mr. H. Tanner, jun.).—Refused.

Width of Way and Lines of Frontage.

Hammersmith.—The retention of a wooden shed at the rear of No. 103, Askew-road, Hammersmith, with the external walls at less than the prescribed distance from the centre of the roadway of Landor-road (Mr. W. C. Smith).—Consent.

Hampstead.†—Buildings upon the site of No. 106, Heath-street, Hampstead (Mr. W. Elsdon for Miss G. Elsdon).—Consent.

Kennington.—Two houses on the south side of Viceroy-road, South Lambeth, with forecourt boundaries at less than the prescribed distance from the centre of the roadway of the street (Mr. G. G. Rogers for Mr. H. J. Tydeman).—Consent.

Line of Frontage and Construction.

Battersea.—A wood and iron building on the forecourt of No. 77, Battersea Park-road, Battersea (Messrs. J. A. J. Woodward & Sons for Battersea Park Brewery Company).—Refused.

Space at Rear and Projections.

St. Pancras, North.—A building adjoining No. 1, Lady Margaret-road, St. Pancras, with an open space at the rear (Mr. J. F. Parker for Mr. H. Freemantle).—Consent.

Space at Rear.

Battersea.—That the Council do consent to Nos. 11, 13, and 15, High-street, Battersea, having open spaces about such buildings (Mr. H. Griffin for Messrs. G. J. Chadwin, W. D. Nichols and Miss C. Bennett).—Consent.

Lewisham.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building on the west side of Gillian-street, Ladywell, with an irregular open space at the rear (Messrs. Norfolk & Prior for Mr. T. G. Lifton).—Consent.

Wandsworth.—A deviation from the plans approved for the erection of a house on the west side of Nepean-street, southward of Umbria-street, Wandsworth, so far as relates to the erection of such house with a one-story studio (Mr. A. J. Hardwick for Mr. T. D. McMeekin).—Consent.

Formation of Streets, etc.

Westminster.—That an order be issued to Messrs. R. B. Grantham & Son sanctioning the formation or laying out of a new street for carriage traffic to lead from Francis-street to Cobourg-row, Westminster (for the Ecclesiastical Commissioners).—Consent.

Kensington, South.—That an order be issued to Mr. D. Brown sanctioning the formation or laying out of a new street to lead out of the east side of Church-street, Kensington, and in connexion therewith the erection of buildings.—Consent.

Lewisham.—A deviation from the plans sanctioned for the formation of two new streets for carriage traffic in continuation of Sandrock-road and Overcliff-road, Lewisham, respectively, and of a street for foot traffic only to connect such two new streets, so far as relates to trees being substituted for the posts required to be erected across the street for foot traffic only, and an alteration in the level of such street (Mr. N. McDougall).—Consent.

Whitechapel.—Means of ventilating the new streets for foot traffic only, upon a site on the south side of Fashion-street, Commercial-street, Whitechapel, and the erection of Bostwick gates, 10 ft. in height, at the entrances to the new streets from Brick-lane, Fashion-street, and Flower and Dean-street (Mr. A. Davis).—Consent.

Buildings for the Supply of Electricity.

Kensington, South.—The retention of coal-conveying machinery on the roof of the Company's generating station, Richmond-road, Kensington (Messrs. Babcock & Wilcox, Ltd., for the Brompton and Kensington Electricity Supply Company).—Consent.

Bow and Bromley.—A steel chimney at the generating station, Glaucus-street, Poplar (Mr. J. H. Bowden for the Council of the Metropolitan Borough of Poplar).—Consent.

Working-class Dwellings.

Hackney, South.—Dwelling-houses to be inhabited by persons of the working class, and proposed to be erected upon a site abutting upon Homerton-row, Urswick-road, and High-street, Homerton (Messrs. Gordon & Gunton for Hackney Borough Council).—Consent.

Means of Escape at Top of High Buildings and Projections.

Kensington, South.—Means of escape in case of fire proposed to be provided on the sixth (top) story of two of the proposed buildings upon the site of "York House" and "Maitland House," Church-street, Kensington (the upper surface of the floor of which story is above 60 ft. from the street level) for the persons dwelling or employed therein (Mr. D. Brown).—Consent.

The recommendations marked † are contrary to the views of the local authority.

BATHS, EAST LEEDS.—The Lord Mayor of Leeds (Mr. Robert Armitage) has just opened the new baths which the Corporation have erected in York-road. The building, which has been erected for the joint purposes of a branch library (already opened) and public baths, occupies a position with a frontage of 110 ft. to York-road. The accommodation consists of slipper baths, Russian bath, swimming bath, laundry, boiler-house, etc. There are twenty slipper baths, sixteen for males and four for females, and the swimming bath has a water area of 75 ft. by 30 ft., the maximum depth being 6 ft., and the minimum 3 ft. The total cost of buildings, machinery, fittings, and general equipment of the library and baths will be about 20,000*l*. Mr. H. A. Chapman, of Leeds, is the architect.

Books.

A History of Architecture on the Comparative Method. By PROFESSOR BANISTER FLETCHER and BANISTER F. FLETCHER. Fifth edition, revised and enlarged. London: B. T. Batsford. 1905.

IN reviewing the previous edition of this publication we welcomed certain improvements and corrections. The present, or fifth edition, contains further developments, all of which have materially improved the value and widened the scope of the book. Mr. B. F. Fletcher, the original joint author, points out in the current preface that 200 pages and some 700 illustrations are added, whilst he has re-written much of its matter. All this, we observe, is accomplished without adding to the bulk of the volume; indeed, by changing the quality of the paper the actual size is reduced.

In view of the constant necessity for modification due to research and discovery, it is of paramount importance that any such book as this, which is forced to condense its contents, should be accurate in its references and varied to comply with the most recent disclosures and opinions. The author appears to be alive to this fact, and is to be congratulated upon producing an amended and extended edition in so brief an interval. The chief development lies in the treatment of the classic periods of architecture. Amongst many valuable additions are restorations of the Acropolis and of the Forum at Rome. A diagram termed "The Tree of Architecture" now prefaces the work, and is a device which should tend to mould the popular idea of what architecture really is.

It would be here impossible to enter upon a detailed criticism, but in a broad survey we should say that the treatment of the numerous phases of the art of building is somewhat disproportioned, that the work is written from the English standpoint, and that the influence of materials as a factor in all design is not sufficiently emphasised. So much is attempted, and much of it so well dealt with, that the average reader is disappointed in, for instance, observing that American architecture of the Renaissance has no illustration and but scant reference; that Scottish work is dismissed in two pages; that the Gothic building extending to Norway is not noticed; and that the architecture of Russia, a vast territory prominent in current affairs, is practically unheeded. We could wish also to see the pages of line diagrams less crowded, and what is attempted more completely dealt with. As an instance, St. James's Church, Piccadilly, has its tower cut off and no idea of its termination given, in an endeavour to accomplish everything on one sheet. Again, little pieces of design are often given without a key reference to show the actual relation to the whole.

We do not agree with the author in substituting the terms "early" and "late Victorian style" for the expression "The Nineteenth Century" of the fourth edition in concluding remarks upon English architecture. In this respect, also, several of the examples are open to question; we should not consider the new Westminster Cathedral as belonging to the Gothic school. Printers' errors are still present, and the general index is in need of revision.

In so comprehensive a work, however, defects are sure to arise which a constant and thorough re-editing will alone correct, but the "History of Architecture on the Comparative Method" is, in its present form, a work which deserves its success.

The XVIIIth Century Architecture of Bath. By MOWBRAY A. GREEN, A.R.I.B.A. Bath: G. Gregory. 1904.

MR. GREEN has produced a monumental volume worthy of its interesting subject. The book is rather one for a general library than an architectural one, as it deals in part with the social as well as with the architectural history of XVIIIth century Bath; but the author has given a good deal of pains to tracing out the architectural history of the most important streets and buildings, and the part which various architects had in designing them. Prior Park of course occupies a considerable space in the book; but the street houses in Bath are not neglected.

The development of Bath during the

period when the place was most fashionable is a testimony to the dignity of effect which can be given to a city by the employment of the traditional forms of classic architecture, even in a somewhat tame and prim version. Taken separately, the fronts of the houses would seem dull and commonplace enough; the effect lies in the bold massing of streets and terraces into one comprehensive design, to which classic columnar architecture lends itself so well. The Circus and Camden-crescent are effective by their breadth and continuity of treatment, to which all individuality in the design of any one house is sacrificed; one could only know one's house by the number, for all are exactly alike, a long façade divided up into tenements. Something is lost in domestic interest by such a treatment, but it must be admitted that if the taste of the private house-owner is neglected, public architecture is considered; with the result that in spite of its small size, Bath is the most stately city in England, the only one which (to compare small things with great) may be said to vie with Paris in dignified appearance. The best part of Milsom-street, too, with its segmental columned bay, answered by square columned and pedimented projections at an equal distance on each side, is a most effective piece of street architecture of the kind.

The author has aimed at showing the manner in which Bath was transformed, chiefly by the Woods, father and son, of whom the elder was a speculating builder as much as an architect, and financed his architectural improvements as well as making the designs for them. Among the interesting items in the volume is the reproduction of the working-drawing plans for one of Wood's country houses, that of Titan Barrow, Kingsdown, designed by Wood in 1748 for Mr. Southwell Pigott. These plans seem to combine plan and specification in one document. The walls are drawn in outline only, not filled in with shading, and over the floor space of each are the very neatly-written directions or memoranda as to the way in which it was to be finished; this was how things might be arranged before the days of "quantities." This is the description on the floor marked "drawing room":

"The Floor of this room to be boarded with clean Norway oak doubled, an architrave chimney-piece in Freestone to be carved, a white and veined marble slab, the room to go up to the Roof and to be coved a third or ⅓ of its altitude as shall be directed, and a compartment in the ceiling with an enrich'd bed moulding within. A Corinthian entablature round the room fully enriched in free stone, double architraves round the doors and blank door. Tabernacles round the windows with scrolls, festoons, and rolls (?). Wainscot Sur Base high, and the walls lined above to the Entablature with slitt deal. The timbers of the floor to be 6 inches deep, and ceiled or otherwise closed to prevent air or damp from penetrating into the room."

All dimensions are figured, though the scale also is carefully kept. The doors seem small, varying from 3 ft. to 2 ft. 6 in. This is a 24-ft. by 18-ft. room, so that of course the "6 in. timbers" were on sleeper walls, though no mention is made of this; but it is odd that in the adjoining study, 18 ft. by 16 ft. 6 in., we find special mention of a girder 12 in. by 10 in. and joists 10 in. by 2½ in. Presumably the study was cellared under and the drawing-room was not. Apparently sections were not drawn; in the writing on the hall we find the note that "this room and the study and the dressing-room are to be ten feet high in the clear"; "the front door to be close or sashed as shall be directed. The same to be hung with good hinges and to have a Lock and Nocker to it." In the upper plan the description of the drawing-room (which was "to go up to the roof") is continued—"The ribs on the cove of the room to be of old Beal Board of 2 inches thick, or of Sweeds deal." The whole document forms a curious record of house-building a hundred and fifty years ago. The plan of a house in Queen-square is another interesting record, with a bedroom opening out of the drawing-room on the first floor, with no other access (originally), and another bedroom opening out of that. In more recent times, too, angle passages have been opened to get to the back rooms, by cutting a bit out of the corner of the staircase.

If the exterior architecture of the Bath houses was monotonous in its dignity, however, there was variety enough internally, in ceilings, fireplaces, and decorations generally; all in one style, but varied in detail, and all in excellent taste, characterised by refinement without display or exaggeration. Illustrations of many of these are given. There was perhaps no period when the interior decoration of dwelling-houses was more refined in character, though it was no doubt deficient in colour.

The book is got up and printed in a sumptuous style, and is a credit both to author and publisher.

Laxton's Builders' Price-Book for 1905. Originally compiled by WILLIAM LAXTON. Eighty-eighth edition. London: Kelly's Directories, Ltd., 182, 183, and 184, High Holborn, W.C.

WHAT's in a name? one is led to exclaim when taking up the eighty-eighth edition of this work, the forerunner of the modern price-book; we, however, do not think there is much in common between this work and that originally compiled. A short time since we had the opportunity of examining the edition of 1861—just halfway back to the first edition—and could not fail to be impressed with the difference, in point of size and usefulness, between that volume and those of the past few years. The difference in the prices too was a revelation, notwithstanding the fact that, for obvious reasons, Laxton was in its earlier days the favourite book of reference for builders when any question arose. The prices in the edition before us have been generally brought up to date, but we are afraid that if the editor does not alter the prices of his brickwork his work will not find the favour with the architect that it does with the builder. True, a note is made in the heading that bricks are estimated at 45s. and 40s. per 1,000 for stocks and grizzles respectively. These prices have done duty for some time now, and we think they could be safely reduced. The harvest of the brickmakers of a few years ago is now a thing of the past.

It is obviously impossible to look at every one of the 72,000 prices, but we notice an awkward slip on page 125. On page 124 in the general notes on Westmorland slating the price is given at 70s. per square (a fair one), whereas in the prices proper on page 125 it is given at 55s., which is very misleading.

We are glad to see that the chapter "On the Adaptation of a Price-book to meet varying Rates of Wages" has been revised to meet the present rates, after having been for some years calculated upon an erroneous basis.

Rather more than a third of the total work is made up of various items of information *re* Building Acts and various regulations, legal questions and contract documents, as well as numerous tables, without which no price-book is considered complete nowadays. While not strictly appertaining to prices, they add to the usefulness of the volume as a work of reference.

Taking the work through, we may say that, with a few exceptions, it can be generally relied upon as far as is possible with a work of this nature.

The Scientific Design of Masonry Arches: with Numerous Examples. By THOMAS ALEXANDER, M.A.I., Professor of Engineering in the University of Dublin, and ARTHUR WATSON THOMSON, D.Sc., Professor of Engineering in the College of Science, Poona. Illustrated by Twenty-five Diagrams. Dublin University Press.

THIS is a folio pamphlet which has been incorporated in the second edition of a treatise upon "Elementary Applied Mechanics" by the same authors. The main object in view is the design of masonry railway bridges and viaducts with arches of long span and small rise. In order to carry successfully swiftly-moving traffic of the kind it is desirable that the middle portion of the arch-ring should be characterised by a considerable amount of elasticity, while the haunches are heavily backed to afford the requisite resistance to the horizontal thrust of the arch. The beautiful manner in which the authors have worked out the various problems connected with the designs of such bridges is truly worthy of the highest encomium, and in our opinion the method of treatment is the best hitherto published. In Rankine's "Civil Engineering," conjugate load areas are discussed in the characteristic style of that master by the aid of mathematical expressions which are difficult of application to the equilibrium of arches. The authors here substitute a semi-graphical mode of constructing the load areas, dispensing, to a large extent, with mathematics and extending the method to the complete design of segmental and elliptical arches, with their spandrils, abutments, and piers. The family of catenarian curves is considered as divided into two groups, the more important of which has been designated by the authors "two-nosed" catenaries. Consideration of these two varieties helps to demonstrate the manner in which masonry arches break up when the abutments are gradually removed. The most practical portion of the work is the one containing tables which furnish all the information necessary for the direct design of segmental masonry arches.

In this notice we cannot attempt to discuss in detail the methods followed by the authors. Their treatment is thoughtful and admirably lucid, the illustrations are of more than ordinary excellence, and the book is one which we can conscientiously recommend to all who desire to grasp the essential features of arch design as applied to structures of the class to which reference is made.

Practical Masonry: a Guide to the Art of Stone-cutting. By WILLIAM R. PURCHASE, Building Inspector to the Borough of Hove. Fifth edition, enlarged. London: Crosby Lockwood & Son. 1904.

THE fifth edition of a book does not as a rule call for an extended notice, and the volume before us is no exception to the rule. It is an able and practical treatise on the art of stone-cutting which can be heartily recommended to students. The author writes clearly and tersely, and does not shirk any of the difficult problems occurring in ordinary practice, such as geometrical stairs, vaulting, domes, skew arches, and circle-on-circle work. There are fifty-two full-page plates, containing about 400 diagrams. In this edition new sections have been added on "Masonry Estimating and Quantity Surveying" and "Building Stones, Marbles, and Granites." These sections are decidedly useful. The author has taken pains to ascertain the current prices and other particulars of the stones mentioned, but the list is necessarily incomplete. It is, however, a matter of surprise that no mention is made of a marble now so well known as the Verde Antico, or of some other Greek marbles. The Glossary of Terms is also incomplete; thus, we find "architrave," "cornice," and "entablature," but no separate entry for "frieze," and we look in vain for "baluster," "balustrade," "dado," "die," "foot-stone," "knee-stone," "pedestal," "pendentive," "stringcourse," "trefoil," and a number of other terms used in connexion with masonry. The glossary is used as a kind of index, but does not by any means include references to all the matter in the text. These are comparatively trifling defects, and do not detract seriously from the merit of the book.

The Year's Art: 1905. Compiled by A. C. R. CARTER. London: Hutchinson & Co. 1905.

THIS is the twenty-sixth annual issue of this useful publication. It contains the usual full information as to the doings in the art-world during the past year, with a special report on the investigation in regard to the Chantrey bequest, and portraits of the members of the Chantrey Committee of Inquiry. The editor contributes a short review of "The Past Year."

Portland Cement for Users. By the late HENRY FAIJA, M.Inst.C.E., Hon. A.R.I.B.A. Fifth Edition, Revised and Enlarged by D. B. BUTLER, A.M.Inst.C.E., F.C.S., Pres.Soc.E., M.Soc.C.I. London: Crosby Lockwood & Son. 1904.

ORIGINALLY published some twenty-three years ago, this handy little book has been successively revised and enlarged by the addition of supplementary and extra supplementary chapters and appendices, first by Mr. Faija, and then by Mr. Butler, but still without making the volume at all bulky. The present author—or perhaps we should say, the editor—has been reluctant to alter the arrangement of the work, or to touch the writings of the original author more than necessary. Although quite appreciating his motives, we cannot help thinking that, as two of the added chapters consist of matter that belongs properly to other chapters in the book, and as the appendices now cover nearly as many pages as the main body of the work, it would be better if the whole subject matter had been entirely rearranged. Apart from this suggestion no fault can possibly be found. Mr. Butler has corrected a few passages which, in the light of modern knowledge, required emendation or modification, he has added a revised form of specification, a chapter on "Adulteration," and a modern series of analyses, thus bringing the work thoroughly up to date, and preserving its former character as an admirable guide for users of Portland cement.

Carpentry Workshop Practice. By C. F. and G. A. MITCHELL. London: Cassell & Co., Ltd.

THIS book is a volume of the Polytechnic Series, and is specially adapted to the requirements of students at the Polytechnic Institute. It is a well-illustrated and business-like little book, and covers an immense deal of ground in something under a hundred of its small pages. The first two-thirds of the text are devoted to the description of tools and timber. As a rule these descriptions are too brief to be very lucid, but they are as accurate and complete as it is possible that they should be in the allotted space. They would be entirely admirable as given by a pupil to his teacher or examiner, but as given by the teacher to his pupils it is often doubtful if they would convey much information except to the most intelligent. We quote the last three of six lines describing the "Shrinkage of Timber": "The seasoned section of a piece of timber may be determined by imagining these plates (the medallary rays) to act as ribs of a system (such as a fan) and closing upon its centre." As a terse, philosophical statement of the theory involved, this sentence could hardly be surpassed, but would it convey to the average student such necessary information as, for instance, that a board in drying goes convex on the side nearest the heart, and concave to a less extent on the side remote? Some of the descriptions, however, such as that of the function of the "cap iron" are all that can be desired.

After the chapter on "Tools" we have chapters on "Operations," "Joints," and "Exercises," from the most elementary up to the construction of curved work, and the veneering in patterns of plain and curved surfaces. Here, again, the work is good, but it still suffers from the continuous attempt at an almost impossible brevity. The directions given are absolutely dry and formal, without "tips" or any intelligent anticipation of the beginner's difficulties. Even so, however, these directions are often better and more useful than many of two or three times the length that we have read in other books on the same subject. They are written at all events by good craftsmen in a thoroughly scholarly way, and this is more than can be said of the majority of such manuals on the useful arts.

Hard Woods: English and Foreign. By PERCY A. WELLS. London: Percival Marshall & Co.

THIS little book is No. 5 of the "Woodworker" series, and should be useful to the amateur. It is, however, for the most part, clearly a compilation, and not always as careful as it ought to have been. Perhaps it is not fair to criticise it without reference to the preceding volume of the series, by the same author, on "Soft Woods," which we have not seen; for that volume, we are told in this, explains the various methods of seasoning, and other important preliminaries. It is sincerely to be hoped that this is the case, for in the present volume the subject of natural seasoning is disposed of on page 9 by the quotation of a table of Laslett's, which, in its new context, is most misleading. According to this table a log of oak 8 in. square can be dried by the natural method in six months, whereas the ordinary allowance for drying oak plank is one year for every inch of thickness, and for good joinery or cabinet-making this allowance is considerably less than it ought to be. The explanation of the discrepancy probably is that Laslett's table was written for carpenters; and no doubt an oak beam may very well be put into a timber roof long before it is dry enough to be used for more delicate work. Laslett's book is, in fact, a treatise on the strength of the material as applied to building construction, ship-building, etc., and was never intended to furnish data to the cabinet-maker or the amateur.

Mr. Wells' book is cleverly illustrated with pen-and-ink sketches, and should be useful up to a certain point in the identification of timbers; but he has described a good many with which he is obviously not familiar.

PUBLIC BATHS, LOWERMOOR.—The opening of the Lowermoor Baths took place a short time ago. The baths, both swimming and slipper, have been erected at a cost of 10,000*l.*, the builder being Mr. Stevenson, of Oldham, and the architects, Messrs. Groome & Grant, of Manchester.

BOOKS RECEIVED.

REINFORCED CONCRETE CONSTRUCTION.—By A. W. Buel and C. S. Hill. (Archibald Constable & Co., 21s.)

A HANDBOOK FOR SUPERINTENDENTS OF CONSTRUCTION.—By H. G. Richey. (Chapman & Hall.)

STAINED GLASSWORK (Artistic Crafts Series of Handbooks). By C. H. Whall. (John Hogg.)

STRUCTURAL DESIGNERS' HANDBOOK. By W. Fry Scott. (Engineering News Publishing Co., New York.)

MODERN HOMESTEADS: A PRACTICAL AND ILLUSTRATED TREATISE. By Samuel Taylor, F.S.I. (The *Land Agents' Record* Office.)

Correspondence.

ARCHITECTURAL EDUCATION.

SIR,—As I find no further reference to this subject in the *Builder* this morning, I shall now briefly amplify certain statements in my article on the subject which you were good enough to publish, and which your correspondent, "H. M.," appears to have been unable to understand. Unfortunately, he confines his criticism to points of comparatively little importance—matters capable of easy adjustment when the Educational Board goes more into detail after they have elicited some general expression of opinion on the part of provincial societies and individuals—which I assume was their object in making their tentative scheme public. My knowledge of that scheme was derived from Mr. Blomfield's remarks and the discussion following, as reported in the *Journal* of the Royal Institute of British Architects of February 25 last, and if your correspondent will be so good as to refresh his memory by referring again to the recommendations of the Board, as explained by Mr. Blomfield, he will, I think, readily grasp my meaning when I speak of serving the architect only half-time during the third year. The proposal, as explained, was this (see p. 243 of the *Journal*):—

> ". . . . . These five subjects would be studied in the schools during the two years' preliminary or introductory course. The advanced course, which would follow on (that is to say, during the third year), would include the further study of materials and construction, design, history, and architectural drawing, with some rudimentary instruction in modelling."

The recommendation is that the first two years shall be devoted to study of a preliminary character, and that the third year he should go into an architect's office and that *the more advanced scholastic studies should be continued.* Does "H. M." mean to say that the student is to work daily full time in an architect's office and then to get this advanced instruction in any way he can manage to do it, and in the scraps of time that are left at his disposal? Now, if, as I contend, an essential condition in any course should be that the obligatory hours of work for any young man between sixteen and twenty years of age should not exceed nine hours daily, I should like "H. M." to explain how this is to be adjusted in any better way than that which I have suggested. Nor is the proposal so absurd as "H. M." seems to think. It is no use pleading that if architects are so deeply interested in the education of architectural students as they profess to be they might stretch a point and occasionally give one a stool in their office for four and a half hours daily, even if they were not actually in need of his services. What is more to the purpose is to show that in the suggested arrangement they would have much the best of the bargain. The would-be half-timer is not an ignorant lad interfering with the work of the office in any way. He has learnt everything essential to qualify him as a draughtsman—or, if not, he had better give up the idea of ever being one. He is in the position of an improver, and he comes to an architect with certificates proving his competency, and says, "If you will allow me a seat in your office four and a half hours daily this year I will do my best to assist you, and I shall serve you full time next year without asking for any remuneration." Of course, an architect who saw no chance of having employment for an odd hand of this kind should decline to have him, and no one should take more than one such improver at a time. That, of course, is only my opinion; and I think, further, that if an architect in such circumstances—as he is encouraged to do by the Educational Board—exacts a premium for what is nominally a year and a half's apprenticeship, it is simply degrading the premium to the level of a bribe for securing a situation.

Of course, there are other ways of dividing the time to suit the teaching facilities in different localities, but the time being strictly limited it must be judiciously allocated with due regard to the value of what is to be gained by its expenditure. For example, if we are of opinion that the knowledge which may be obtained by a student during his third year by attending classes in school or college is likely to be of more value to him than that which he could obtain in an architect's office, the time should *not* be equally divided between the two modes of tuition. The scholastic should decidedly have the preference and have the largest share of the available time assigned to it.

I can only ask you to allow me briefly to refer to one other matter regarding which "H. M." seems mystified, namely, my stipulation that during the first year of his preliminary course the student should have at least a month of holidays. In Mr. Blomfield's address nothing was said about the student's occupation during the first two summers, and as I had suggested filling up the blank by a few months' instruction in a merchant's or accountant's office, I took care to prescribe that the student should have a clear month of holidays. That is the simple explanation. But I now understand from "H. M.'s" remarks that the proposal is that instruction should go on during the summer, and that the terms and holidays should correspond with those of our public schools. I entirely agree with your correspondent in thinking that to be the most satisfactory course, but is it practicable? It may be in London, but not generally over the country. Here in Glasgow, for example, the classes available for the architectural student are, with some trifling exceptions, open only during the winter months. The architectural class and the building construction class are over now, not to resume till October; so is the civil engineering class at the University (an important class for young architects nowadays to attend), and the classes generally. A school or college, independent of the existing subsidised institutions, would not pay. Students drawn chiefly from the middle classes cannot afford to pay high fees; they would certainly seek to obtain the necessary instruction where it could be obtained most cheaply.

Allow me, in conclusion, to express the hope that the Educational Board will not confine their attention too exclusively to the requirements of London, and that they may be able to devise a scheme which may be practicable in all the larger cities at least to which students from the country may resort, as they do at present, for the preliminary studies in Divinity, Law, and Medicine. JOHN HONEYMAN.

Glasgow, April 15, 1905.

The Student's Column.

TYPICAL STRUCTURES IN CONCRETE-STEEL.—XVI.

A FRENCH VILLA RESIDENCE—(*Continued*).

IN this article we draw attention to some further constructive details of the concrete-steel villa at Bourg-la-Reine. Fig. 111 is a plan of the floors of the first story viewed from below, and, for the purpose of identification, the names of the rooms on the ground floor are indicated, with the exception of the linen-room (*lingerie et resserre*) and servant's bedroom near the water tower and the bedroom in the nursery wing, all on the entresol. The *loggia* and the *balcon*, as lettered, are on the first floor level, being above the verandah-conservatory of the *salon* and the balcony of the *salle-à-manger* (see Fig. 106 *ante*).

The floors above the nursery and children's dining-room consist of single slabs of concrete-steel 14 centimetres thick, without intermediate support between the walls, and the adjoining bedroom on the entresol has a similar slab 10 centimetres thick. On the west side of the nursery wing the upper balcony is carried by four cantilevers projecting from the main walls, the octagonal tower being supported partly by the wall continuations mentioned last week and partly by the massive corbelling shown in Fig. 108 *ante* and in plan (from below) by Fig. 114. The balcony on the south side of the nursery is supported by three cantilevers.

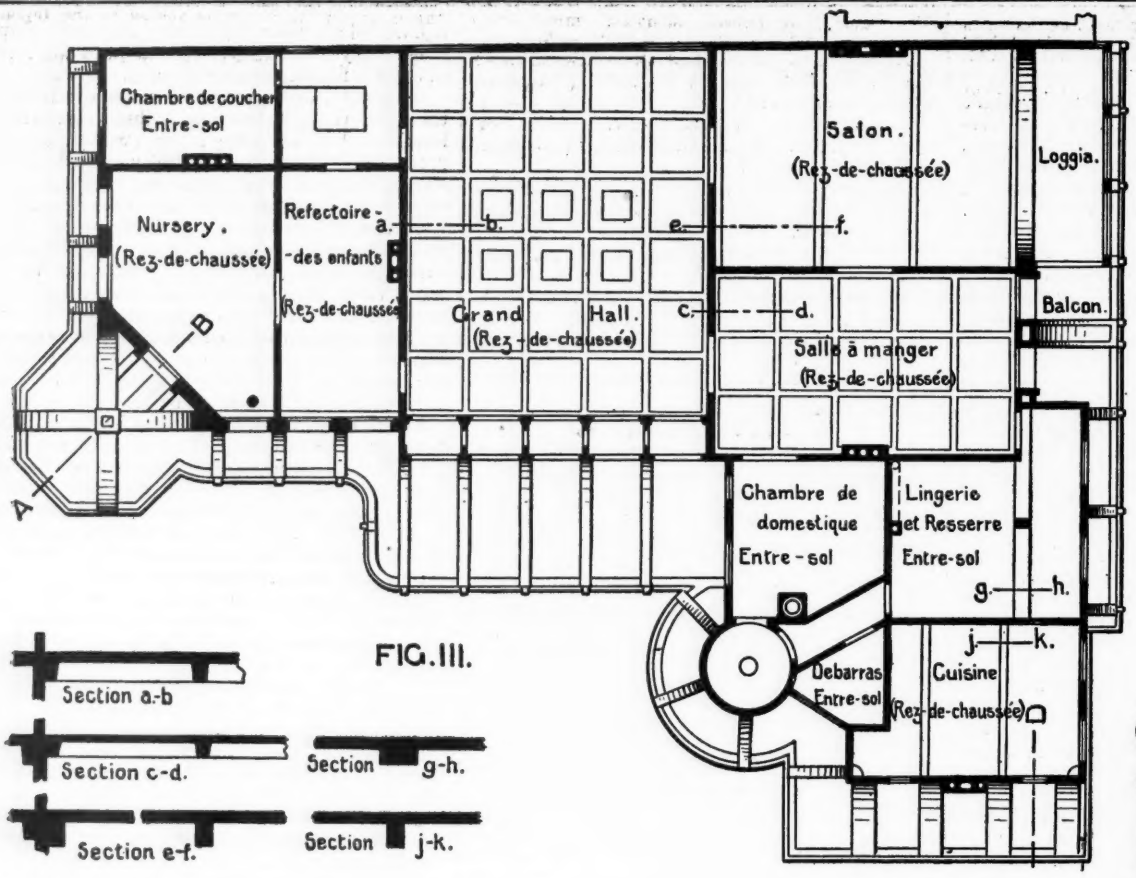
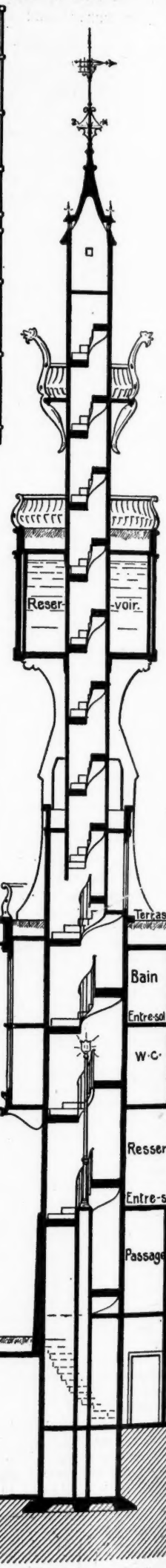


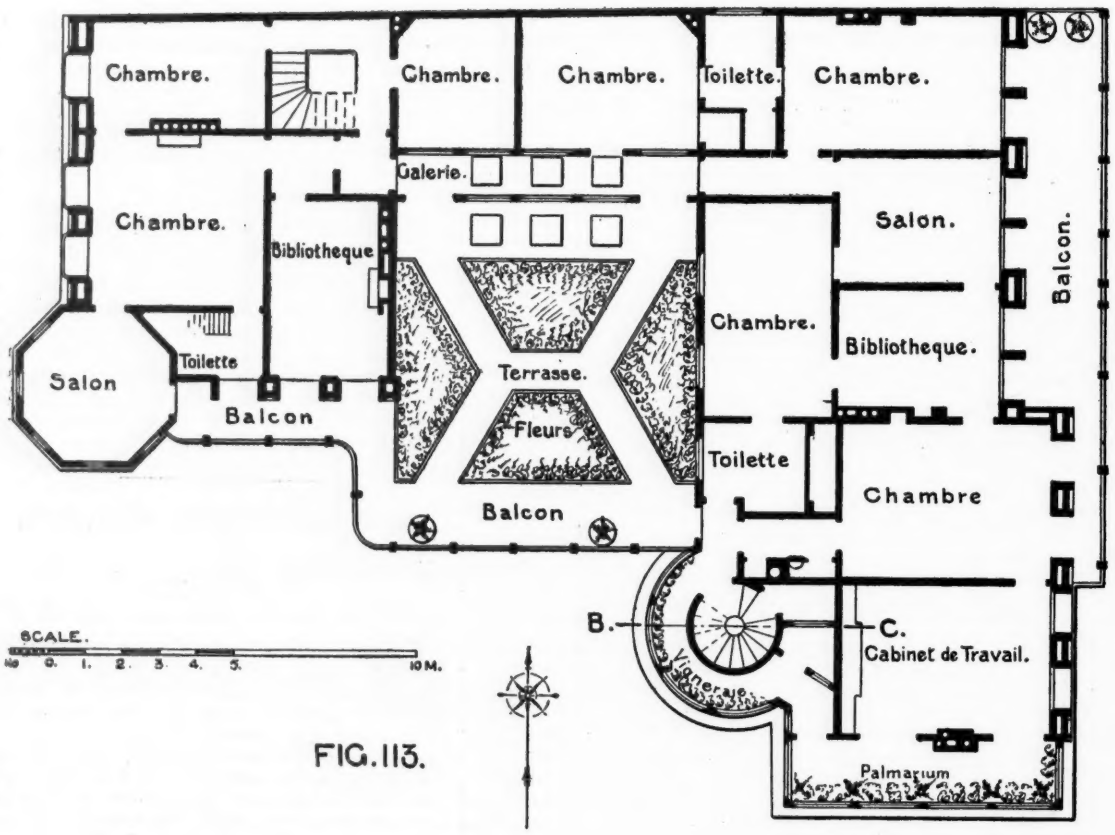
FIG. 111.



Section B-C.

FIG. 116.

FIG. 112.



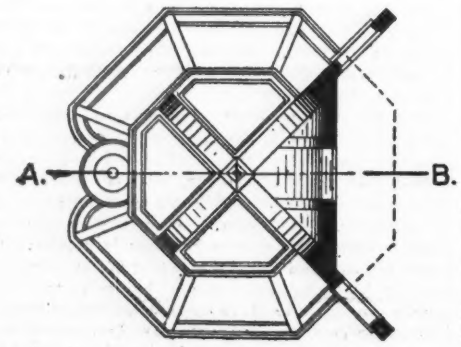


FIG. 113.

FIG. 114.

FIG. 115.

Illustrations to Student's Column.

The bottom floor of the tower is 14 centimetres thick and the balcony floors are 10 centimetres thick.

Section *ab*, Fig. 112, shows the construction of the wall between the children's dining-room and the hall and a small portion of each floor slab, the thickness being 14 centimetres in the former apartment and 10 centimetres in the latter. It will be seen by Fig. 111 that the ceiling of the hall is divided into thirty square panels, each 1·60 metres square, by a series of longitudinal and transverse beams of tapered cross-section. As shown by Fig. 112, the beams are 20 centimetres deep by 17 centimetres wide at the top and 12 centimetres wide at the bottom, but those at the walls, being tapered on one side only, measure 14·5 centimetres wide at the top. In six panels over the middle of the hall ceiling lights of armoured glass 70 centimetres square are inserted, as shown in the plan. Fig. 111 also shows the corbelling, with a projection of 3·40 metres, supporting the balcony over the principal entrance to the villa.

The ceiling of the *salle-à-manger* is divided into fifteen square panels of the same dimensions as those in the hall. Support is given at the walls by tapered beams measuring 14 centimetres wide at the top and 12 centimetres wide at the bottom, while the intermediate beams are 16 centimetres wide at the top and 12 centimetres wide at the bottom, the projection below the floor slab in each case being 16 centimetres. The thickness of the floor slab itself is 6 centimetres (see section *cd*, Fig. 112).

The floor above the *salon* is divided into three panels each 5·70 metres long by 2·50 metres wide. The outer panels are supported by rectangular beams (see section *ef*, Fig. 112) projecting from the walls, the dimensions being 18 centimetres wide and 25 centimetres deep below the floor, and the intermediate beams are of the same dimensions.

Fig. 111 shows the supports of the balcony, with a floor 10 centimetres thick, extending from the kitchen wall to the north gable of the house. Part of this balcony is supported by corbelling of which the under side is shown in the drawing. The part lettered *loggia* is over the verandah outside the *salon*, and consists of a concrete-steel floor supported along one side by the front wall of the house and on the other side by the uprights of the verandah, as illustrated in Fig. 109 *ante*. Section *gh*, Fig. 112, shows the bressummer, 40 centimetres wide by 15 centimetres deep, beneath the linen-room on the entresol, the floor slab of this room being 10 centimetres thick. The other two rooms on the same level have floors 12 centimetres and 8 centimetres thick, respectively, without any intermediate support. The floor above the kitchen is divided into three panels, for which intermediate support is afforded by two concrete-steel beams each projecting 25 centimetres below the floor slab and having a width of 18 centimetres (see section *jk*, Fig. 112). The floor slab is 8 centimetres thick and the re-inforcement of the entire construction is connected with that of the walls.

The balcony outside the southern wall of the kitchen is carried by four massive brackets and has a floor slab 10 centimetres thick. It will be seen that this balcony is connected with the segmental gallery extending partly round the water tower, the latter construction being carried by three cantilever brackets and having a floor slab 10 centimetres thick.

Near the water tower will be observed a large flue, which is that proceeding from the hot-water boiler in the basement. This, together with all the other flues indicated in the plan, is constructed of reinforced concrete, monolithic with the walls of the building.

Fig. 114 is a view of the under side of the octagonal tower at the angle of the nursery wing. This drawing shows clearly the design of the main corbelling described in Article XV. and the arrangement of the secondary corbelling extending to the outer walls.

Fig. 113 is a plan of the first floor of the villa. Communication between the various rooms on the eastern façade is conveniently afforded by the balcony previously mentioned as extending from the kitchen wall to the end gable. It is worthy of note that, with the object of minimising the effects of extremes of temperature, the walls along this façade were built hollow, as shown in the plan and also in the section, Fig. 109 *ante*. The same method of construction has also been applied to the nursery wing.

The *cabinet de travail*, situated immediately over the kitchen, opens into the *palmarium*, which is a glazed verandah communicating by way of the *vigneraie* with the open-air terrace garden, which occupies a central position on this story. The glazed partitions, thus enclosing the *cabinet de travail*, serve the purpose of excluding any odours emanating from the kitchen without interfering with the ample supply of fresh air from the balconies on either side of the room.

The balcony of the terrace garden gives convenient outside access between the octagonal *salon* in the children's wing and rooms in the other portion of the house, while outside communication is afforded by the covered gallery which runs across the inner end of the terrace garden.

Fig. 115 is a plan of the *terrasse* of the octagonal tower. The inner area, covered with grass and planted with fruit trees, forms the roof of the kiosk over the small *salon* on the first story (see Fig. 108 *ante*).

As mentioned in Article XV., the whole of the flat roof at the top of the house is covered with earth to the depth of 1 metre, so that vegetables and flowers may be grown under favourable circumstances and to afford an adequate depth for the roots of shrubs and trees. Taking the weight of earth at 80 lb. per cubic ft., the metre depth of soil in the present case involves a dead load of 1,280 kilogrammes per square metre, to say nothing of the weight of the hothouse, which is situated along the northern wall of the building.

Although very considerable, this load is equal to only about one-half of that mentioned in connexion with the Depôt of the Compagnie Générale des Omnibus (see Article VIII., p. 213), and presents no difficulty whatever to the concrete-steel designer. Of course, in a case such as that now in question, it is necessary that proper means of drainage should be provided and that the upper surface of the roof slab should be made impervious to moisture. These details, however, are perfectly easy of accomplishment, and the necessary resistance of the floor can readily be provided by the application of sufficient reinforcement to the concrete.

The most striking feature of the villa undoubtedly is the water tower to which incidental reference has already been made. The tower was built for the primary purpose of supporting a water reservoir with a capacity of 25 cubic metres at a height of 18 metres above the ground floor level, or 8 metres above the roof of the house.

The erection of a storage tank at this elevation was necessary to provide water at adequate pressure during the day, as supplies direct from the town mains were only available during the early hours of the morning. The tower also serves the purpose of providing convenient means of communication between the basement and the different floors of the building, as may be seen by reference to Figs. 106, 111, and 113. The top of the reservoir has been utilised as a balcony garden, and by continuing the tower still higher a second gallery and a small observation chamber were placed at the disposal of those desiring to enjoy a view of the surrounding country and to obtain fresh air far above the neighbouring houses.

In the design of the tower the architect has seized the opportunity of demonstrating the elasticity and homogeneity of concrete-steel, and from our present point of view the success of his demonstration makes amends for the somewhat incongruous appearance of the construction as an architectural detail of the villa.

Fig. 116 is a vertical section of the tower through the lines BC in Fig. 113. The total height from the foundation to the top of the vane is 40 metres, and, as may be seen by the drawing, the structure consists of two parts, one fitted into the other something like the joints of a fishing rod. The internal diameter of the lower portion is 2·50 metres, the thickness of the walls being 11 centimetres, except near the bottom, where a slight batter is established in order to permit the thorough connexion of the tower with the lower walls of the façades. This was very properly regarded as a matter of much importance. The tube, of 2·50 metres diameter, continues up to the height of 3·50 metres above the terrace garden, and a few centimetres above the level of the latter the smaller tube commences, this portion having an internal diameter of 1·20 metres and a wall thickness of 5 centimetres. The socket formed by the overlap of the lower tube provides for the doorway which gives access to the terrace garden.

The treads of the staircase in the lower tube are of concrete-steel, moulded in advance with a diagonal plate on the underside of each, so that when fixed in juxtaposition the undersides of the steps form a continuous ceiling over parts of the spiral staircase below. The treads were embedded to a depth of 3 centimetres in the concrete of the tubular wall. No string course was required at the inner ends of the treads, which terminate so as to form a central well-hole of 50 centimetres diameter. Up to the level of the entresol this well-hole is filled by a concrete-steel tube, as shown in the section, to shut off communication between the exterior and interior of the building, and upon the closed top of the tube a lamp standard is fixed.

The most interesting part of the tower is that above the terrace garden. As represented in Fig. 116, the staircase of the upper portion commences within the prolongation of the 2·50-metre diameter tube. In addition to the connexions between the two tubes by horizontal members just above the terrace level and by the staircase, a secure fixing is furnished by the annular diaphragm of concrete-steel near the upper end of the larger tube. This diaphragm is utilised as the bottom of a receptacle for earth in which creepers and flowering plants can be grown.

Further, four radial counterforts, or buttresses, of concrete-steel, of which two may be seen in Fig. 116, are fixed outside and incorporated with the prolongation of the lower tube, above which they are carried inwards to stiffen the smaller tube, and continued up to the bottom of the water reservoir. The reinforcement of the buttresses is connected with that of the bottom, sides, and top of the reservoir.

The hollow shaft of the tower, with the reduced diameter of 1·20 metres and walls of 5 centimetres thick, passes through the centre of the reservoir to give access to the upper balconies and observation chamber. A horizontal section of this shaft, taken immediately above the concrete-steel cover of the tank, shows a ring of 1·20 metres diameter inside and 1·30 metres diameter outside, stiffened by four pilasters of 20 centimetres width and 5 centimetres projection, the sectional area of concrete-steel being 2,364 square centimetres. A horizontal section taken immediately above the lower portion presents the same area of 2,364 square centimetres plus four exterior counterforts of 20 centimetres width and 30 centimetres projection, making a total area of 4,764 square centimetres. A horizontal section taken at the height where the counterforts are of minimum thickness gives an area of 3,960 square centimetres.

The construction of the upper portion of the tower can be very well defined as that of a tube fixed in a vertical position, having a height of 22 metres, an inside diameter of 1·20 metres, and an outside diameter of 1·30 metres, on which has been threaded and fixed about half way up, upon four exterior stays, an annular reservoir weighing about 45,000 kilogrammes, and above this a second annular ring represented by the upper balcony.

All the individual parts—comprising the tube, staircase, buttresses, reservoir, balcony, and spire—are monolithic, and the whole of the reinforcement is most thoroughly interconnected. The weight of the construction at the top of the lower portion of the tower—that is, at the height of 3·50 metres above the terrace—is about 100,000 kilogrammes.

It should be added that the wind pressure, according to its direction, imposes very considerable loads upon the counterforts at one side of the tower, while the opposite counterforts are practically relieved of load.

So far as concerns expansion, it should be remembered that the end of the tube which extends above the reservoir is exposed to relatively rapid temperature changes, while, on the other hand, the part protected by the water in the reservoir is maintained at a temperature which varies very little indeed.

The flue of the hot-water boiler in the basement (see Fig. 113) passes through the terrace, then through the reservoir, in company with the shaft of the upper portion of the tower, and terminates at a convenient height above the balcony formed upon the top of the reservoir.

Finally, we may add that no leakage of water and no cracks in the shaft, counterforts, or other parts of the structure have been manifested during the two years which have elapsed since the reservoir was first put in service.

COURT OF COMMON COUNCIL.

THE usual fortnightly Court of Common Council was held on Thursday, last week, at the Guildhall, the Lord Mayor presiding.

Building Acts (Amendment) Bill.—Among the correspondence received was a letter from the London County Council forwarding a copy of a report adopted by the Council on April 4 with regard to the London Building Acts (Amendment) Bill, asking the co-operation of the Corporation, the metropolitan borough councils, and other authorities concerned, in introducing in the next Session of Parliament a Bill containing all the necessary amendments of the Acts. The letter was referred to the special committee which has the matter under consideration.

Widening of Bishopsgate-street.—A resolution was read from the Vestry of St. Botolph Without, Bishopsgate, urging the Court to proceed to effect the necessary widening of the northern end of Bishopsgate-street, now that the London County Council had refused to contribute towards the cost of the improvement. The resolution was referred to the Improvements and Finance Committee.

The Opening of Streets by Public Companies.—A letter was read from the Metropolitan Paving Committee stating that they had decided to convene a conference on this matter, and asking the Court to appoint two representatives, with the Town Clerk and Engineer, to attend the conference. The letter was referred to the Streets Committee with power to appoint delegates. The conference will be held at Westminster City Hall on May 19 next.

Appointment of City Engineer.—On the appointment of the new City Engineer, the Court resolved itself into a committee of the whole Court, and considered the matter with closed doors. On the Press being re-admitted it was announced that Mr. Frank Sumner was the successful candidate, having been elected by 111 votes. Mr. Sumner was the Borough Engineer and Surveyor to the Woolwich Council. Mr. Arthur Collins, City Engineer, Norwich, polled the next highest number of votes—seventy-two. A list of the selected candidates will be found in our issue of April 1.

Blackfriars Bridge.—The report of the Bridge House Estates Committee on the advisability of widening the north end of Blackfriars Bridge was again adjourned.

WESTMINSTER CITY COUNCIL.

THE meeting of this Council was held at the City Hall last week.

The Coliseum "Sky-sign."—The Law and Parliamentary Committee reported that they had received a presentment from the Works Committee requesting them to consider what steps should be taken by the Council with reference to the revolving sign on the tower at the London Coliseum, St. Martin's-lane, which might be held to be a sky-sign within the meaning of the London Building Act, 1894. The Committee stated that a notice had been served on the Theatre Company, and, in reply, the solicitors of the Company had stated the sign was unfinished, and that, when finished, it would not contravene the Act. Since that statement was received the lower half of the spherical framework had been lined with metal. The Committee proceeded to cite the definition of a sky-sign in the Act, and recommended that the London County Council should be informed that, as it was very doubtful whether the device referred to was a sky-sign within the meaning of the Act, and having regard also to the fact that the County Council had approved the plans and elevation before the building was erected, the City Council did not feel justified in taking any further action in the matter. Mr. Payne, the Chairman of the Committee, said that he had been told by Mr. Emden that the sign was not a sky-sign within the meaning of the Act. He thought that the case might be brought before a magistrate for him to decide. After further discussion the matter was referred back for further consideration.

METROPOLITAN ASYLUMS BOARD.

THE usual fortnightly meeting of this Board was held on Saturday, last week, at the offices, Victoria-embankment.

On the recommendation of the Finance Committee it was agreed to apply to the Local Government Board for sanction to the incurring of an expenditure of 750*l.* on the installation of fire alarms at the Northern Hospital, and minor works at Leavesden and the North-Western hospitals.

The Works Committee submitted their report on the annual painting and cleaning works at various institutions, and Messrs. John Leaning & Sons, and Messrs. W. H. Barker & Son were appointed to take out certain of the quantities. Messrs. R. L. Curtis & Sons were appointed to take out the quantities of the additional works about to be carried out at the Belmont Asylum.

GENERAL BUILDING NEWS.

ALL SAINTS' NEW CHURCH TOWER, BRIXHAM.—The Vicar (the Rev. Stewart Sim), Rural Dean of the Ipplepen Deanery, laid the foundation-stone, on the 5th inst., of a tower as the final instalment of a scheme adopted some years ago for rebuilding the parish church of All Saints, Brixham. The work is being carried out from designs prepared by Messrs. J. S. Micklethwaite & Somers Clarke, architects, of Westminster.

RESTORATION OF MORETONHAMPSTEAD CHURCH.—Moretonhampstead parish church was re-opened, on the 6th inst., by the Bishop of Exeter, after undergoing enlargement and restoration. The work has been carried out according to the designs of Mr. W. Mills architect, of Oxford and Banbury. The old plastering of the granite walls has been removed. The wood floor has been replaced with red Minton tiles, and, under the new oak seats, wood-block flooring has been laid. The new waggon roof is of oak, with deal rafters. The belfry floor has been raised above the arch of the west window, and the end gallery has disappeared, admitting more light. The carved screen is a replica of the old one. The carved oak pulpit, on a granite base, is the gift of Mr. T. C. Dewey. The chancel steps and floor are of polished white-and-black marble. In the new organ loft, the balcony of which is of white Beer stone, there is to be placed a three-manual organ, the gift of Mr. Tilby, of Teignmouth. The chancel has been extended 9 ft., and lined with Beer stone. On the south side of the chancel a stained-glass window has been placed as a memorial of the late Right Hon. W. H. Smith, M.P. The stained-glass memorial window to the Stevenson family has been removed from the north to the west aisle, to make room for a new vestry. Underneath the organ loft two vestries have been provided, for the clergy and choir. A new hot-water apparatus and gas fittings have been supplied. Over the south porch a priest's chamber was found with a small window covered with plaster. This has been opened up, and the arms of the Earl of Devon (in whose gift the living was formerly) also discovered plastered up, have been placed over the window. The choir stalls are the gift of the parishioners.

NEW CHURCH, BUDE UNITED METHODISTS.—A new church for Bude U.M.F.C. has just been opened. Constructed mainly of local stone, the exterior of the church is set off with limestone facings and cement ornamentations. Facing the sea are a tower and copper-sheathed spire, 80 ft. high. There is also a shorter tower, and between the two a three-light window. The church is heated by hot-water by means of pipes and radiators, and lit by acetylene gas. There is seating accommodation for about 400 persons. The rostrum, which is the gift of Messrs. Pethick Brothers, in memory of their late father, is approached on each side by a staircase, with oak hand-rails, supported by fluted columns. The framing is of pitch-pine, with fluted oak columns and cornice, and panelled with figured poplar, interspersed with carved oak panels. At the back of the rostrum are an organ loft and a choir stall. Mr. John Pethick was the architect. The cost of the scheme, exclusive of furnishing, etc., is over 3,500*l.*

UNITED METHODIST FREE CHURCH SCHOOL, WIGAN.—The new school premises in connexion with the United Methodist Free Church, King-street, Wigan, have just been opened. The alterations and extensions that have been made will cost, approximately, 2,500*l.* The alterations have resulted in a larger and higher upper room, the assembly hall, being constructed with a gallery on three sides, accommodation being given for between 500 and 600 people. The lower room is divided into a lecture-room and two classrooms. A platform has been erected, which can be extended for concerts and other occasions. Additional classrooms are also built, these being divided by revolving partitions. The building will be heated with hot water and lit with the electric light. The architect is Mr. W. H. Dinsley, of Chorley, and the builders are Messrs. Johnson & Sons, of Wigan.

PRESBYTERIAN CHURCH, WALTON.—On the 10th inst., the Lord Mayor of Liverpool opened the new Welsh Presbyterian Church, at Breeze-hill, Walton, erected on the site of the old church, which existed for twenty years. The church is of red pressed brick and white Storeton stone, and the side walls are faced with grey brick, with dressings of red brick and stone. There is a rear gallery, and the building has total accommodation for over 600 persons. The architect was Mr. Otis D. Black, and the general contractors, Messrs. Haugh & Pilling.

DOWN CATHEDRAL.—On the 31st ult. the Cathedral of the Holy and Undivided Trinity was reopened at Downpatrick after renovation and repairs. The cathedral, as restored, has thus been described:—"It is a stately embattled edifice, chiefly of unhewn stone, supported externally by buttresses, and comprising a nave, choir, and aisles, with a lofty square tower embattled and pinnacled, and smaller square towers at each corner of the east gable, in one of which is a spiral stone staircase leading to the roof. The aisles are separated from the nave by lofty, elegant arches resting on massive piers, from the corbels of which spring ribs, supporting the roof, which is richly groined and ornamented at the intersections with clusters of foliage and archaic designs, grotesque animals, birds, and forms; the nave is lighted by a long range of clerestory windows, and the choir by a handsome east window, divided by mullions into thirteen compartments with minor lights, and which appears to be the only window remaining of the last former splendid edifice. Over the east window are three elegant niches with ogee pointed arches, which formerly contained, on pedestals, the remains of the mutilated statues of St. Patrick, St. Brigid, and St. Columbkill." The interior dimensions of the building are as follow:—The entire length, from the west door of the tower to the east wall, 153 ft.; from the door of the porch, or nave, to the same, 126 ft.; length of the nave, from the porch door to the back of the organ-screen, 42 ft.; width between the piers, 26 ft. Transepts—length, from north to south, 14 ft.; breadth, from east to west, 20 ft. Length of the choir, from the back of the organ-screen to the east wall, 80 ft., being the central part; length of the side aisles of choir, 62 ft. 10 in.; total width of the choir, 62 ft.—the side aisles being 14 ft. wide, the central part 26 ft., and the thickness of the piers being 4 ft. 6 in. each. The whole length of the main building, from east to west, within the walls, is 105 ft. The communion rails and lectern are gifts of members of the congregation in memory of departed relatives, whilst a number of stained-glass windows have been inserted in memory of persons connected with the cathedral. The great east window cost nearly 1,000*l.* The County Down Masonic Lodge have also two mural tablets and a stained-glass window in memory of departed members. In November, 1891, the officers and men of the 2nd Battalion R.I.R. (the old Royal County Down Regiment) contributed a brass tablet in memory of their comrades who had fallen in the Egyptian campaign, and, in May, 1894, the old colours of the regiment were placed over the tablet. In 1903 two memorial tablets were erected. The most distinctive feature within the cathedral to the eye of a visitor is the beautiful old organ-case of carved oak, filled in with lines of gilt organ pipes. The organ-case is erected on the organ-screen, also of carved oak, between the nave and the choir, with carvings on the top surmounted by gilt crosses, which almost touch the lofty Gothic ceiling. During the past year much-needed repairs have been carried out to the building. Outside, the south-east pinnacle has been restored, as well as the north-east pinnacle of the tower, and the entire fabric pointed. The three-story clear glass windows in the south side have been filled with cathedral rolled plate tinted glass. In the interior, which has been in the contractor's hands since January 16 last, plastering has been carried out where required, and the walls and ceiling have been treated with light cream duresco. The entire work has been satisfactorily carried out by Mr. W. Sampson Jervois, of Armagh, diocesan architect; Mr. Jas. Craig, Belfast, was the contractor; and Mr. H. M'William, clerk of works.—*Belfast Weekly News.*

RESTORATION OF ST. WILLIAM'S COLLEGE, YORK.—The restoration of St. William's College, York, has now been commenced. At present the whole of the many rooms, upstairs and downstairs, are in need of repair. The woodwork of the edifice is rotten in many places, some of the staircases have almost gone, and the tiled roof needs attention, as well as the old-fashioned windows of diamond-shaped panes. The work is in the hands of Mr. T. S. Ullathorne, of Selby, under the direction of Mr. Temple Moore, of London.

PRIMITIVE METHODIST SCHOOLS AND INSTITUTE, ABBEYDALE, SHEFFIELD.—On the 10th inst. new Sunday schools and a young people's institute were opened for the Carter Knowle district. A leasehold site has been procured at the junction of Abbeydale and Edgefield roads, and in addition to the schools opened, which

occupy the rear of the site and have a frontage to Edgefield-road, space is left for building a church to overlook Abbeydale-road. The new schools are the design of Messrs. Hall & Fenton, architects, of Sheffield. The front part of the building and the boundary walls are of rock-faced stone, with ashlar dressings, with an exposed brick gable fronting to Abbeydale-road, but this will form an interior wall when the church is erected. On the ground floor is an assembly hall, measuring 45 ft. by 38 ft., and capable of seating 400 or more people. There are also three classrooms and a minister's vestry. Access to the second floor is furnished by a stone staircase, which is provided with a couple of landings opening into small vestries. On the upper floor is a second assembly hall, corresponding with the one on the ground floor. Here also are several classrooms, opening from the assembly hall, and having their frontage to the street. The place is heated by hot water. The contract for the building was let at 2,590*l.*, Messrs. F. Margerison, of Dronfield, being the contractors. The sub-contractors were:—Joinery, Mr. J. Allen; plumbing, Mr. A. H. Ward; painting and plastering, Mr. C. H. Chadwick; hot-water engineers, Messrs. Stanley Sheen & Co., Sheffield; ironwork, Messrs. G. Oxley & Sons; railings, etc., Mr. Leonard Holling, Attercliffe-road; gas fittings, Sheffield United Gaslight Company; furnishing, Messrs. W. & T. May, Abbeydale.

METHODIST CHURCH, WESTOE.—A new church, with schools adjoining, has been erected by the members of the Westoe United Methodist Free Church, at the corner of Birchington-avenue and Westoe-parade. The new buildings have approximately cost 5,000*l.* Messrs. W. J. Robertson & Sons, of South Shields, were the contractors, and Mr. Smith was the architect.

ELEMENTARY SCHOOL, EASTBOURNE.—On the 11th inst. the foundation-stone was laid of the new public elementary school, which is being erected on a site near East-street, Eastbourne. Accommodation will be provided for 305 boys and a similar number of girls, and the total cost is estimated at 6,356*l.*, exclusive of the site. Mr. F. G. Cook is the architect, and Mr. Peerless Dennis the contractor for the work.

RESTORATION OF CULROSS ABBEY.—A meeting of the Heritors of the parish of Culross was held in the Abbey church recently, when the following resolutions were agreed to:—(1) That the approval of the report and relative plans for the repair and restoration of the church, prepared by Sir R. Rowand Anderson, architect, be confirmed; (2) that the Heritors accept liability for the sum of 2,320*l.*, being the proportion of the total cost of the works, which the said report suggests should be undertaken by them. . . .

CO-OPERATIVE PREMISES, MORPETH.—At Morpeth Town Council plans were recently submitted by Messrs. Liddle & Browne, architects, on behalf of Ashington Industrial Co-operative Society, for the erection of new business premises in Morpeth, and passed. They are to be built at the corner of Newgate-street and Copper Chare.

HOUSES BUILT IN LIVERPOOL.—Mr. William Goldstraw, Liverpool Corporation Building Surveyor, states in his annual report that during the past nine years 17,414 houses have been built in the city; last year 2,174 were erected, or 269 above the average of the previous eight years. West Derby tops the list of districts with 624 new houses; Walton is second with 525, although, taking the past ten years, the total is greatest in Wavertree. Value of the houses erected:—Under 12*l.* rental, 258 (all Corporation dwellings); 12*l.* to 18*l.*, 284; 18*l.* to 25*l.*, 1,067; 25*l.* to 35*l.*, 449; 35*l.* and upwards, 116. Besides 2,174 new houses, the following were erected:—Workshops, stables, and minor buildings, 110; new public buildings and manufactories, forty-one; new warehouse, one. The new buildings include baths, technical schools, free libraries, places of worship, of education, and of entertainment. Duties regarding the means of ingress and egress of public buildings have also been discharged by the building department. The buildings taken down numbered less than the average of the past eight years. These were:—Dwelling-houses, 293; workshops, stables, etc., twelve; public buildings, offices, and manufactories, ten. Of the 293 houses 111 were demolished by the Housing Committee. The work of inspecting and dealing with dangerous buildings last year was much above the average. The cost of the department for the year was 2,973*l.*, or about 300*l.* more than the previous year.

WESLEYAN MISSION HALL, HIRST, DURHAM.—A mission hall has been erected at Seaton Hirst at an estimated cost of 3,500*l.* The site of the new mission hall, which will provide seating accommodation for 400 persons, is situated at the corner of Milburn-terrace and Seventh-avenue. Sufficient space has been reserved in the front of the site for the church. The entire outlay of the present scheme will be about 1,600*l.* Mr. J. Walton Taylor is the architect, the contractor of the scheme being Mr. T. A. Turnbull, of Rowland's Gill, the ventilation, plumbing, and heating work having been carried out by Mr. Byles, of Newcastle.

ST. MICHAEL'S COLLEGE, LLANDAFF.—The contract for the first section of the new St. Michael's Theological College at Llandaff has just been let. The first section includes the administrative block, lecture hall, library, warden's rooms, etc., and the contract has been let to Mr. James Allan, J.P., at 8,650*l.* The architect is Mr. F. R. Kempson, of Cardiff and Hereford, and the quantities were prepared by Mr. Charles Taylor.

MASONIC TEMPLE, HULL.—The new Masonic Hall of the De la Pole Lodge of Freemasons, situate in Osborne-street, Hull, was dedicated on the 4th inst. by the Right Hon. Lord Bolton. The new temple has been acquired by purchase from the Methodist New Connexion, and is within two minutes' walk of the tramway terminus in St. John-street. It has been completely gutted, and there are now only the outer walls left of the original building in Osborne-street. On the basement is the Masonic temple, 41 ft. by 28 ft. 6 in., and height, 15 ft. At the north end is the covered dais, 21 ft. by 10 ft., which is raised two steps above the floor of the room, and separated from the lodge by one elliptical and two semi-arches, supported by fluted Corinthian columns. The side walls have Corinthian columns and arches. Fibrous plaster squares, of about 8 ft. each, divide the ceiling, and the same material has been used for the girders supporting the room above. The side platforms are also raised above the floor of the lodge. Near the entrance to the temple is the organ. For heating purposes, high-pressure pipes are laid under the platform. The entrance hall is laid with mosaics, and from this access is gained to a corridor, 42 ft. long by 6 ft. wide. A mahogany staircase leads from this to the banqueting hall on the first floor. This hall is 43 ft. long by 24 ft. wide, 13 ft. high at the side walls, and 19 ft. high in the centre of the segment or curved ceiling. The roof of the building is carried on curved steel ribs, the side walls being ornamented with 12-in. Corinthian pilasters and caps. The curved ceiling is panelled, and executed in fibrous plaster relief. In addition there are the steward's room and other offices. The contractors for the structural alterations have been Messrs. S. Johnson & Son, Mirfield; for the fibrous plaster and other work, Messrs. Harrison & Andrews, Hull. The works have been carried out under the superintendence of Mr. Ernest Whitlock, architect, Hull.

SANITARY AND ENGINEERING NEWS.

DURHAM SEWAGE SCHEME.—Mr. A. A. G. Malet, M.Inst.C.E., an Inspector of the Local Government Board, held an inquiry, at Durham, on the 12th inst., into an application by the Corporation of that city to borrow a sum of 16,589*l.* in connexion with the new sewage disposal scheme. Mr. Taylor, the engineer of the new sewage scheme, informed the Inspector that a sewer put in Gilesgate, at a cost of 2,449*l.*, had been abandoned. If the borough boundary was extended it was proposed to put in supplementary pipes to deal with the storm water, which at present in heavy rains flooded the districts of Alexander-crescent and the bottom of Western Hill, and to discharge it direct into the river. In dry weather the present sewers were amply sufficient. Mr. Taylor explained in detail the proposed new scheme.

VENTILATION OF SEWERS.—A joint committee, consisting of the Highways and Health Committees of Shoreditch Borough Council, reported on Monday having considered a communication from the Lewisham Borough Council on the question of the ventilation of sewers and interceptors, and asking for co-operation in approaching the London County Council with a view to obtaining the repeal of the by-law relating to this matter, made under section 202 of the Metropolis Management Act, 1855. The joint committee, having discussed a report from the Borough Surveyor, and a joint report from the Medical Officer and Chief Sanitary Inspector, and having taken evidence from the Borough Surveyor and the Medical Officer on the question of interceptors, passed the following motion:—"That the communication from the Lewisham Borough Council in so far as it relates to the placing of surface ventilators be received, and as to that portion of the letter dealing with interceptors we co-operate with Lewisham in approaching the London County Council to consider the question of repealing the by-law referred to."

FOREIGN.

FRANCE.—The jury for the competition organised by the Fondation Rothschild, for the construction of buildings composed of small sanitary and economical dwellings for the working classes, has chosen twenty-five out of the 127 competitors to enter for the final competition. The twenty-five chosen schemes are not classed in any order of merit.——The Municipal Council of Paris have refused to sanction the erection of a statue to Baron Haussmann, the late Prefect of the Seine.——At the Ecole des Beaux-Arts M. Raoul Verlet, the sculptor, has been appointed professor of modelling in place of M. Coutan, who has been summoned to take up other duties; and M. Paul Dubois, whose health has been bad this winter, has resigned his position of Directeur, and will be replaced by M. Bonnat. M. Gustave Michel, the sculptor, has been appointed a member of the Conseil Supérieur of the Ecole, in place of M. Verlet.——A competition has been opened for designs for a new Hôtel de Ville at Bizerte.——The Department of Assistance of Paris has decided to erect, at Ivry-sur-Seine, a hospital for chronic invalids. It will be known under the name of "Asile de la Ville de Paris."——M. Lerey, architect, has been instructed to carry out a new Mairie at Redon.——The President of the Republic is to preside at the inauguration, about the end of the month, of the monument erected at Bourdeaux to the memory of Gambetta. The architectural portion of this monument is by M. Formigé; the sculptural portion is the latest completed work of Dalou.——The death is announced, at the age of 76, of M. Edouard Houssaye, who was one of the founders of the *Gazette des Beaux-Arts* and of the *Chronique des Arts*.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.—Messrs. Norman & Stacey, art furnishers, have closed their premises in Tottenham Court-road, retaining only their City offices at 118, Queen Victoria-street, E.C.

FLAT-BOTTOMED RAILWAY RAILS.—In Report No. 11, the Engineering Standards Committee give the newly-settled "British Standard Specification of Flat-bottomed Railway Rails." The work of preparing the dimensions and regulations governing the manufacture and testing of this type of rail section devolved upon a sub-committee under the chairmanship of Mr. James C. Inglis, of the Great Western Railway. The clauses of the specification are generally similar to those of the specification for tramway rails previously noticed in our columns. Two tables of dimensions are printed in the appendix, which also includes ful-size drawings of the seventeen standard sections, ranging from 20 lb. to 100 lb. per yd., the increase of weight being 5 lb. for each successive section. The appendix contains, in addition, drawings of British standard tensile test pieces. These test pieces formed the subject of a separate report, which is now being reprinted in all other standard specifications to which it is applicable.

WAR MEMORIAL, ISLINGTON.—A memorial, in honour of ninety-eight Islingtonians who fell in the South African war, 1899-1902, will be unveiled on July 8, in Highbury Fields. The memorial, designed by Mr. Bertram Mackennal, is in the form of a figure of Glory holding a statuette of Victory in her right hand, and in her left a laurel wreath. There will be in front an inscribed tablet, and, on either side, bronze tablets recording the names of the dead.

ARCHBISHOP TEMPLE MEMORIAL, RUGBY SCHOOL.—The committee of subscribers to the proposed Rugby Memorial to the late Dr. Temple have appropriated 300*l.* for the medallion portrait, executed by Mr. Brock, for the school chapel. The committee hope that a sum of about 11,000*l.* will be forthcoming for the erection of a new speech-room, in memory of the late prelate, upon a parcel of land which Dr. James, the headmaster, will make over for that purpose. After consideration the committee decided that the memorial should consist of a fresh and adequate speech-room, rather than of the originally projected new big school.

CEMENT NOTES.—In Canada, according to the preliminary official summary of last year's yield of minerals in the Dominion, the production of natural rock cement, which has for a number of years been small in comparison with the output of Portland cement, showed another large decrease, the sales being only 56,814 barrels, valued at $49,397, as compared with 92,252 barrels, valued at $74,655, in 1903. In the absence of complete returns, Portland cement statistics have been partially estimated. The following is, however, a close approximation:—Portland cement sold, 900,358 barrels, valued at $1,272,992; Portland cement manufactured, 908,990 barrels; stock on hand

January 1, 1904, 124,919 barrels; stock on hand December 31, 1904, 133,551 barrels. It appears from Mr. Consul-General Schwabach's annual report that the exports of cement from Germany in 1904 amounted to 635,247 metric tons, as compared with 742,381 metric tons in 1903. This remarkable falling off was chiefly due to reduced shipments to the United States of America—viz., 94,100 tons against 221,700 tons in 1903. The shipments to the United Kingdom were only 29,000 tons, as compared with 36,000 tons in 1903, and 33,000 tons in 1902. The total value of the cement imported into Mexico in 1904 is estimated at 77,820*l*. It is stated that during the past five years there has been in Mexico a very steady increase in the importation of limes and cement, due to the greater demand for such articles in the construction of buildings, roads, and public works.

JOULE MEMORIAL, SALE.—A bronze memorial of the late James P. Joule is shortly to be erected at Sale. The work is of heroic proportions, and will be, in all, 11 ft. high. The pedestal will be of stone or granite, and above it will rise, 4 ft. in height, the half-length figure in bronze. The sculptor is Mr. John Cassidy, of Manchester.

CHATHAM MASTER BUILDERS' ASSOCIATION.—The annual dinner of the Chatham and District Master Builders' Association took place at the Town Hall (minor hall), Chatham, recently, Alderman C. E. Skinner, the President, occupied the chair, supported by the Mayor of Rochester (Alderman F. F. Smith), the Mayor of Chatham (Councillor W. D. Driver), the Mayor of Gillingham (Councillor J. Bramley Ridout), Alderman R. D. Batchelor, Mr. A. B. Hearn, Mr. W. F. Wallis, Mr. G. E. Bond, and Mr. H. H. Dunstall. The loyal toasts having been honoured, Mr. Walter West gave "The President of the Southern Counties Master Builders' Federation," and, in coupling the name of Mr. W. F. Wallis, the President of the Association, with the toast, said he thought they might congratulate Mr. Wallis on being the first to move in the matter of trying to get the Local Government Board to do something to make it possible to build cheaper houses. It was a very serious question on the side of the housing of the working classes in the rural districts. So many difficulties were presented by the present by-laws that it was perfectly impossible for a working man to get a new house in a country district to live in. Another matter in which Mr. Wallis had done valuable service was in the matter of a conciliation board between master and men.—Mr. Wallis, in responding, congratulated the members upon the strength of their Association. A definite step had been taken in the direction of establishing conciliation boards composed of an equal number of representatives of trades federations and men's unions to deal with trades disputes, and he trusted when the proposal came before the local Association they would do their best to support it. It behoved them all, as men of common sense, to see whether some better means could not be found of arriving at an understanding than existed at the present time. From what he knew of his fellow members of the building trade they had no desire to oppress the men, but they felt they ought, as Englishmen, to resist what they felt to be unfair and coercive demands on the part of the men, especially in matters in which they thought the men had no right to interfere. As to the by-laws, Mr. Wallis said their extraordinary stringency, especially in rural districts, was becoming almost a scandal. It seemed to him that they were, in many cases, getting somewhat under the domination of a grandmotherly system. He had good hope that the agitation which had been raised and fed largely by Mr. Justice Grantham might have some good result in the relaxation of by-laws.—Other toasts followed, including "Success to the Chatham and District Master Builders' Association," proposed by Mr. G. E. Bond, and acknowledged by Alderman Skinner, and "The Local Architects and the City and Borough Surveyors," proposed by Mr. Derrick, and responded to by Mr. H. H. Dunstall, Mr. C. Day, and Mr. J. L. Redfern.

THE PHOTOGRAPHIC SURVEY AND RECORD OF SURREY.—The report of the Council for 1904 states that there is now a total of 1,272 photographs in the Survey collection. In pursuance of the policy of the survey to make its operations as widely known as possible, the hon. Survey Secretary will be glad to hear from secretaries and organisers of suitable exhibitions who may desire to exhibit a selection of photographs. In the architectural section the prints contributed during the year number 455, which may be classified thus:—Churches and church monuments, 367; public buildings, eighteen; private houses and business premises (not official), fifty-three; other erections, including bridges, seventeen. It is remarked that Croydon is far from complete. The parish church, St. Mary Magdalene's, Shirley Church, and Christ Church, Addiscombe, are practically completed, but the remaining churches are poorly represented. There is a fairly full series of the Town Hall, Whitgift's Hospital, and the Old Palace; a recent visit to the latter, however, by the Croydon Antiquities Protection Committee has brought to light some further points worth recording. There are other public buildings in Croydon, which should be photographed during the present year, and several houses which, from their interest and liability to disappear, should be recorded. It is pointed out that some knowledge of architecture and archæological matters in photographing these subjects is necessary, in order to avoid the omission of points which may not be very conspicuous, but which are of the greatest importance.

UNIVERSITY COLLEGE ARCHITECTURAL SOCIETY.—This Society, which has recently been formed, held its first meeting at University College, Gower-street, on Thursday, April 6, when Mr. B. O. Fricker read a paper on "Glass and its Application to Domestic Glazing." Mr. Fricker first described in detail the manufacture of sheet and plate glass, explaining the materials used in each and the different processes each has to go through, and then dealt with the fixing, cutting, and leading of glass, and gave some useful advice regarding the size of panes, etc. At the conclusion of the lecture he showed a number of lantern slides, the most interesting of which were from photographs taken by him inside a glasshouse, showing workmen engaged in the different processes he had described in his paper. The meetings will be held fortnightly, and all the papers to be read will deal with practical subjects. The next paper will be by Mr. E. J. Fowler, on "Architectural Leadwork," to be followed by one by Mr. A. C. Hobbs, on "Reinforced Concrete." The Secretary of the Society is Mr. E. J. Whitley.

COVENT GARDEN MARKET.—For a further extension of the flower market the site is being cleared of several houses and shops at the corner, west, of Wellington and Russell streets. Messrs. Lander, Bedells, & Crompton have been appointed architects to the Duke of Bedford for the new buildings. That firm made the plans and designs of the premises, for the foreign flower traffic, recently erected on an adjacent site on the north side of Tavistock-street.

QUEEN VICTORIA MEMORIAL, ST. HELENS.—The memorial of the late Queen, which has been erected in this town, was unveiled on the 15th inst. The stone pedestal on which the statue is placed is 11 ft. high and 6 ft. square. The bronze statue, which is 10 ft. 6 in. high, and weighs about five tons, represents Queen Victoria seated on the throne in her Royal robes, wearing the crown, and holding the sceptre and orb. The sculptor was Mr. George G. Frampton, R.A.

CRYSTAL PALACE ENGINEERING SCHOOL.—Wilson Premiums for the best papers read before the Crystal Palace Engineering Society during the present session have been awarded by the Council to two students—namely, Mr. W. D. Cornwell, for his paper on "Steam Boilers," and Mr. J. R. W. Teasdale, for his paper on "Bridge Construction in India." Other papers read during the session were "Gas Works," by Mr. N. E. West, and "Winding," by Mr. I. Minnow. The Premiums were presented to Messrs. Cornwell and Teasdale by Mr. J. C. Hawkshaw, Past-President of the Institution of Civil Engineers, on the occasion of the ninety-seventh distribution of certificates at the school on Friday, April 14.

PLANT FOR MAKING CEMENT BRICKS.—The following is a brief description of an installation which has been found very satisfactory on the Continent for making Portland cement bricks. The plant comprises a lift for materials, a mixing machine, a hydraulic moulding machine, a high-pressure pump, and an accumulator. The method of procedure is as follows:—The box of the lift is filled with sand, cement, and lime, and the lift is set in motion by pulling a cord. On arriving at a point just above the mixing machine the box is emptied automatically by suitable mechanism; it then descends and stops at the starting point, both of these operations being performed automatically. The sand, cement, and lime are thoroughly incorporated in the mixing machine by means of cast-steel arms attached to a central shaft. At the bottom of the mixing machine is the outlet, closed by a sliding door. From this the mixture passes in a shoot, and is delivered upon the table, where it is filled into moulds by a workman. The filled moulds are transferred by a movement of the machine to the top of the hydraulic cylinder, and the material is immediately subjected to pressure. Another movement carries the material to the workman whose duty it is to receive the bricks as they are automatically delivered from the matrix. This workman places the bricks in a small truck by which they are transferred to the storehouse. The workman then cleans the piston of the press, and the mould is mechanically returned to the first man for refilling. The plant is said to be capable of producing about 6,000 small bricks or about 3,000 large bricks per day of eleven hours. For the manipulation of the moulding machine two men are required, apart from those engaged in transporting the finished bricks to the storehouse. Eight moulds are supplied with each machine—four for small bricks and four for large bricks. It may be added that the pressure upon each brick is made lightly at the commencement of the stroke and afterwards with more power, with the object of economising the consumption of water.

DESTRUCTOR EXTENSION, STOCKTON.—At Stockton Town Hall, on the 11th inst., Mr. A. A. G. Malet, M.Inst.C.E., Local Government Board Inspector, held an inquiry into the application of the Council for permission to borrow 2,500*l*. for the purpose of extending the destructor. Mr. M. H. Sykes, Borough Engineer, gave evidence, stating that the present destructor, which was of the Horsfall pattern, was opened in 1901, and had two cells, with a capacity of twenty tons per day. It was proposed to add two more Horsfall cells, and to extend the building so that there would be room for another boiler and four more cells. After further information as to the system for dealing with the night soil and refuse had been given, the inquiry closed.

CAPITAL AND LABOUR

EMPLOYMENT IN THE BUILDING TRADES.—The returns received from eighty-three employers' associations show that employment generally was dull, but rather better than a month ago. It continued worse than a year ago. Employment with carpenters and joiners continued bad. It was better than a month ago, but worse than a year ago. The percentage of unemployed trade union carpenters and joiners was 7·9 at the end of March, as compared with 9·6 in February, and 6·7 a year ago. With plumbers employment was bad in England, and worse than a year ago. In Scotland it was moderate, and better than a month ago. The percentage of unemployed trade union plumbers was 11·8 at the end of March, compared with 12·5 in February, and 9·4 in March, 1904. With bricklayers employment generally was dull, and about the same as a month ago. With masons it was bad, and slightly worse than a year ago. With plasterers it was bad in England. In Scotland it was rather better than a month ago. With slaters and tilers it was dull, and worse than a month ago in England, but slightly better in Scotland. With painters employment improved, but it was worse on the whole than a year ago. With builders' labourers employment was slack generally.—*Labour Gazette.*

STONEMASONS' WAGES, NEWCASTLE.—The Newcastle branch of the Operative Stonemasons' Society recently held a meeting, at which the result of the interview with the Newcastle and Tyne District Building Trade Employers' Association was considered, and also the reduction of one penny per hour proposed by the masters and alterations in the rules governing employers and employed. The ultimate decision come to was that the masters were not justified in their demands, their reasons not being good and sufficient, and the result of the conference is to be communicated to the Employers' Association. At the same time, though the masons express dissent with the proposals of the masters, they are just as anxious as they were for an amicable settlement of all matters in dispute.

JOINERS' STRIKE, EDINBURGH.—The operative joiners of Edinburgh, who came out on strike on the 15th inst., had a meeting during the forenoon in St. Cuthbert's Hall, King's Stables-road. Between 400 and 450 men were present, the number affected by the dispute, and the chairman (Mr. John Lawson), who was accompanied by two members of the committee, said it augured well for the cause of the men that so many of the committee were working. He was perfectly satisfied with the way the men had turned out, and even the shop of the chairman of the Masters' Association was almost clean. After trade reports had been submitted, a strike committee was appointed, and a strike roll made up. It was reported during the course of Saturday forenoon that other four masters, employing in all over fifty men, had agreed to sign the by-laws on the old terms, and there was a feeling among the operatives that a settlement of the strike would be arrived at during the week.—*The Scotsman.*

Legal.

WIMBLEDON DRAINAGE DISPUTE.

THE case of Jackson *v.* the Wimbledon Urban District Council came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Mathew and Cozens-Hardy, on the 7th inst., on the appeal of the Wimbledon Urban District Council from a decision of a Divisional Court of King's Bench, consisting of the Lord Chief Justice and Justices Wills and Kennedy, the case raising an important question under section 19 of the Public Health Acts Amendment Act, 1890.

The matter came before the Court in the form of a special case, stated by the justices of Surrey, from which it appeared that Mr. Jackson, on August 19, 1903, was summoned by the District Council for default in payment of 35*l.* 1s. the Council alleged to be due from him, being the amount of expenses incurred by the Council in the execution of certain works in relaying the main drain at the rear of Nos. 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, and 73, Hartfield-crescent, Wimbledon, and also for default in payment of 13*l.* 7s. 5d., being a proportion of the expenses incurred by the Council in the execution of certain works in relaying a single private drain connecting No. 73, Hartfield-crescent, and No. 75, Hartfield-crescent, belonging to a different owner, with the public sewer. It appeared that on the north side of Hartfield-crescent Mr. Jackson was the owner of twelve houses, numbered 51 to 73, inclusive. A Mr. Holliday was the owner of the house, No. 75, and a Mrs. Eysoldt was the owner of the three houses Nos. 77, 79, and 81. At the rear of these sixteen houses there ran a main or common drain which was connected with the public sewer in Hartfield-crescent by a branch drain, which ran between the house No. 73 and the house No. 75, at about right angles to the road under a narrow piece of land between the two houses which was unbuilt upon. Each of the sixteen houses connected with the main drain by means of branch drains, which conveyed the sewage from each of the houses to the main drain, and thence through the branch drain into the public sewer in Hartfield-crescent. The main or common drain and the branch drain were constructed wholly upon private property. On November 26, 1902, the local authority received notice that the drains belonging to Nos. 77 to 85 (odd numbers) inclusive, Hartfield-crescent, were a nuisance, and, upon examination, it was found necessary for the drains at the rear of Nos. 75 and 51 to 73 (odd numbers) inclusive to be opened up and examined. Upon inspection it was found that the whole of the main or common drain was in a bad condition, and the local authority served on the owners and occupiers of the said sixteen houses notices in writing to do the necessary works. The owners of the premises 75, 77, 79, and 81 executed the works to the satisfaction of the local authority so far as affected the main or common drain at the rear of the premises, but they made default in executing the works required to the branch drain. Mr. Jackson, as the owner of the said houses, did not comply with such notice, but made default in executing the works required to be done to the branch drains and the main or common drain, and the local authority executed the work and apportioned the cost of the works executed in the sums before mentioned. Mr. Jackson, having made default in complying with the demand, was summoned before the justices by the local authority, and the question for their decision was whether, having regard to all the facts, the drain used for the drainage of the houses Nos. 51 to 73, all of which belonged to Mr. Jackson, was a single private drain within the meaning of section 19 of the Public Health Acts Amendment Act, 1890. At the hearing before the justices, it was admitted, on behalf of Mr. Jackson, that the joint drain from the houses Nos. 77 to 81, No. 75, and Nos. 51 to 73 was a single private drain within the meaning of section 19 of the Act of 1890, but it was contended, on his behalf, that the main or common drain between the points marked B and C on the plan was a sewer within the meaning of section 4 of the Public Health Act, 1875, and not a single private drain connecting two or more houses belonging to different owners with a public sewer within the meaning of section 19 of the Act of 1890. The contention of the local authority was that the system of drainage comprehended the drainage of the whole of the sixteen houses Nos. 51 to 81 (odd numbers) inclusive, Hartfield-crescent, and which houses belong to different owners, and formed in fact one entire drain connecting the whole of the sixteen houses with the public sewer; that, therefore, the full length of the main or common drain and the branch drain—the joint drain from the houses of the three owners—were capable of being dealt with under section 19 of the Public Health Acts Amendment Act, 1890, as a single private drain within the meaning of that section. The justices decided the case in favour of the contention of the local authority. Mr. Jackson then appealed to the Divisional Court, and his appeal was allowed, their lordships holding that the magistrates were wrong in coming to the conclusion that the portion of the drain or conduit between the points C and B—the main or common drain at the rear of Mr. Jackson's houses—was a drain within the meaning of the Public Health Acts, and not a sewer. Hence the present appeal of the local authority. No question arose on the appeal before the Divisional Court or before the Court of Appeal on the question of the joint drain from the houses of the three owners—viz., Mrs. Eysoldt, Mr. Holliday, and Mr. Jackson.

Mr. Macmorran, K.C., and Mr. Geo. Humphreys appeared for the appellants, and Mr. Sylvain Mayer for the respondent.

At the conclusion of the arguments of counsel the Master of the Rolls, in giving judgment after stating the facts, said that the Lord Chief Justice and Mr. Justice Wills had followed up the course of the drain in question, and they said—and his lordship saw no answer to it—that, because at a certain part of the transit of the sewage the sewage passed through a single private drain, that did not suffice to constitute it a single private drain. He thought that the judgment of the Divisional Court was right and ought to be affirmed.

The Lords Justices concurred, and the appeal was accordingly dismissed, with costs.

TO CORRESPONDENTS.

A. B. (Amounts should have been stated).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

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All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

April 5.—By KEMSLEYS' (at Romford).

Romford, Essex.—23, Victoria-rd., and building plot adjoining with buildings thereon, f., p.	£1,490
Hornchurch-rd., a block of freehold building land	200
Oldchurch-rd., two blocks of building land, f.	1,010
Oldchurch-rd., "Black Cottage" and land adjoining, f., p.	450
88, 90, and 92, Albert-rd., f., w.r. 55*l.* 18s.	660
George-st., a plot of freehold building land	265
75 and 77, George-st., f., w.r. 31*l.* 4s.	320
44 to 52 (even), Richmond-st., f., w.r. 79*l.* 6s.	800

April 6.—By MARLER & Co.

Streatham. — Furzedown-rd., "Furzedown Park Estate" with four residences and cottage thereon area 12¾ acres, f., y.r. 530*l.*	17,000
Fulham.—551 to 557 (odd), King's-rd., u.t. 49¾ yrs., g.r. 18*l.*, w.r. 130*l.*	1,005

By C. C. & T. MOORE.

Dalston.—177, Sandringham-rd. (s.), f., y.r. 40*l.*	650
Clapton.—125, Rendlesham-rd. (s.), f., y.r. 35*l.*	590

By STIMSON & SONS.

Deptford.—38, Adolphus-st., u.t. 57 yrs., g.r. 2*l.* 8s., w.r. 33*l.* 12s.	275
Cannonbury.—63, Halton-rd., u.t. 13½ yrs., g.r. 8*l.*, y.r. 40*l.*	160
Camberwell.—14, Windsor-rd, u.t 49 yrs., g.r. 10*l.*, y.r. 55*l.*	410
Dulwich.—57, Upland-rd. (s.), u.t. 74 yrs., g.r. 7*l.*, v.r. 35*l.*	285
Sidcup, Kent.—Hatherley-rd., six named freehold residences, also 3, Alma-villas, f., y.r. 252*l.*	2,425
Hatherley-rd., three named residences, u.t. 76 yrs., g.r. 30*l.*, y.r. 118*l.*	720
1 and 2, Mayfield-villas, f., w.r. 54*l.* 12s.	400

By MONTAGU HOLMES & SONS.

Paddington.—51, Waverley-rd., f., w.r. 63*l.* 14s.	335
46 and 48, Lydford-rd., u.t. 58 yrs., g.r. 14*l.*, w.r. 107*l.*	740
Battersea.—2 to 32 (even), Latchmere-st., u.t. 60½ yrs., g.r. 40*l.*, w.r. 374*l.* 8s.	2,725
Chelsea.—34 to 48 (even), Stanley-rd., u.t. 71½ yrs., g.r. 33*l.* 18s. 8d., w.r. 218*l.* 8s.	1,000
Shepherd's Bush.—24 to 40 (even), Westville-rd., u.t. 71 and 90 yrs., g.r. 58*l.* 10s., y.r. 256*l.*	£2,230
Hemel Hempstead, Herts.—2, 3, and 4, Union-st., f., w.r. 27*l.* 6s.	105

By NEWBON, EDWARDS, & SHEPHARD.

Hackney.—246, Victoria Park-rd., u.t. 48½ yrs., g.r. 12*l.* 2s., e.r. 55*l.*	480
Hornsey.—1, 14, and 93, Park-av. South, u.t. 94 yrs., g.r. 25*l.* 4s., y.r. 130*l.*	1,225
Pentonville.—5, Holford-pl., u.t. 27 yrs., g.r. 6*l.*, y.r. 44*l.*	355
Barnsbury.—11, Muriel-st., u.t. 15½ yrs., g.r. 4*l.* 4s., y.r. 32*l.*	160
21 and 22, Offord-st., u.t. 33½ yrs., g.r. 8*l.*, y.r. 51*l.*	450
Tottenham.—7 and 26, Vincent-rd., u.t. 79½ yrs., g.r. 11*l.* 5s., y.r. 64*l.*	400

By WAGSTAFF & SONS.

Barnsbury.—134, Copenhagen-st. (s.), u.t. 35½ yrs., g.r. 6*l.*, y.r. 50*l.*	360
Holloway.—19, St. John's-villas, u.t. 45 yrs., g.r. 6*l.* 10s., e.r. 40*l.*	340

By T. WRIGHT.

Clapham.—Narbonne-av., mission room and yard, f., y.r. 55*l.*	880
59, 61, and 63, Hambolt-rd., f., y.r. 114*l.*	1,225
31, Elms-rd., u.t. 75 yrs., g.r. 10*l.*, y.r. 55*l.*	545
83, Abbeville-rd., u.t. 75 yrs., g.r. 9*l.*, y.r. 45*l.*	425
Brixton.—10, Winterwell-rd., u.t. 68 yrs., g.r. 7*l.* 16s. 8d., y.r. 44*l.*	430
16 and 18, Winterwell-rd, u.t. 68 yrs., g.r. 16*l.* 5s, y.r. 88*l.*	880
Herne Hill.—6, 8, and 16, Heron-rd., u.t. 61 yrs., g.r. 14*l.*, yr. 104*l.* 14s.	770
102 and 108, Norwood-rd., u.t. 75 yrs., g.r. 36*l.*, y.r. 165*l.*	2,045

April 7.—By J. & R. KEMP & Co.

High Holborn.—Nos. 240 and 241 (s.), f., y.r. 205*l.*	8,300
No. 236 f.g.r. 60*l.*, reversion in 22 yrs.	3,550
Camden Town.—8, Rochester-sq., u.t. 36 yrs., g.r. 6*l.*, p.	445

By MATTHEWS, MATTHEWS, & GOODMAN.

City.—7, Eastcheap (s.), u.t. 11 yrs., g.r. 20*l.*, y.r. 180*l.*	1,350
Highgate.—59, North-hill, c., y.r. 65*l.*	785
Spitalfields.—Brick-la., f.g. rents 20*l.*, reversion in 2 yrs.	1,370
Brick-la., f.g.r. 11*l.* 10s., reversion in 2 yrs.	1,125
Edmonton.—102 to 112 (even), Sheldon-rd., u.t. 90 yrs., g.r. 25*l.* 4s., w.r. 117*l.*	450

By TOWERS, ELLIS, & Co.

Bayswater.—15, Talbot-rd., u.t. 46 yrs., g.r. 5*l.*, p.	500

By T. B. WESTACOTT.

Barnsbury.—3, Everilda-st., u.t. 39 yrs., g.r. 2*l.* 12s., y.r. 30*l.*	275

By WINDRUM & CLEAVE.

Poplar.—299, High-st. (s), f., y.r. 36*l.*	560
Bow.—80, Malmesbury-rd., u.t. 42 yrs., g.r. 4*l.*, w.r. 37*l.* 14s.	275

April 10.—By KEMSLEYS'.

Buckhurst Hill. — Queen's-rd., "Milton Cottage," f., p	700
Romford, Essex.—1, Park-villas, f., p.	600
Hare-st., enclosure of freehold building land, 2 a. 2 r. 19 p.	800

By SIMPSON & MOORE.

Brockley.—11, Endwell-rd., u.t. 70 yrs., g.r. 5*l.* 10s., e.r. 38*l.*	330
Peckham.—24 and 26, Marmont-rd., u.t. 51 yrs., g.r. 10*l.*, w.r. 78*l.*	530

April 11.—By ANSCOMBE & RINGLAND.

Regent's Park.—8, St. Edmund's-ter., u.t. 14½ yrs., g.r. 12*l.*, y.r. 80*l.*	320

By J. BAKER, COOKE, & Co.

Mill Hill.—Dean's-la., a freehold enclosure, 4 a. 1 r. 18 p.	800
Hale-la., "Yew Tree Farm House" and freehold land	1,300
Dean's-la., freehold pasture land, 11 a. 2 r. 32 p.	1,375

By WALTER HALL.

Willesden Green.—74, 76, and 78, Churchill-rd., u.t. 88 yrs., g.r. 18*l.*, e.r. 96*l.*	700

By S. WALKER & SON.

East Molesey, Surrey.—Arnison-rd., f.g. rents 18*l.*, reversion in 70 yrs.	450
Hayes, Middlesex.—Yeading-la., f.g.r. 42*l.*, reversion in 50 yrs.	900

By WYER, ADAMS, & GLOVER.

Clapham.—High-st., "The Royal Oak" b.h., freehold rental of 58*l.*, reversion in 9¾ yrs.	2,000

By HEPPER & SONS (at Leeds).

Roundhay, Yorks.—A freehold residence and grounds, area 2,281 yds., p.	1,750

By C. W. Provis & Sons (at Manchester).

Leigh, Lancs. — "Bedford Lodge Farm," 55 a. 1 r. 6 p., f., y.r. 100*l.* (including minerals)	10,100
Astley, Lancs.—"Morts" and "Parnell Pits" farms, also "Tyldesley Fields," 139 a. 2 r., f., y.r. 235*l.* 10s.	15,475

By R. W. MANN & SON (at Swansea).

Swansea, Glamorgan. — Oxford-st., "The Waterloo Hotel," a freehold rental of 200*l.*, reversion in 18 yrs.	7,000
10 and 11, Oxford-st. (s.), f., y.r. 265*l.*	7,575
14, Waterloo-st. (office and warehouse), f., y.r. 52*l.* 10s.	1,155

By DOWSETT, KNIGHT & Co. (at Waltham Cross).

Waltham Cross, Herts. — Kings-rd., an enclosure of building land, 2 a. 1 r. 16 p., f.	560
Enfield Town.—Lavender Hill, enclosure of building land, 2 a. 0 r. 27 p., f.	350

By PERKINS & SONS (at Southampton).

Southampton.—Denzil-av., a piece of freehold building land	480

April 12.—By C. H. BROWN.

Pimlico.—7, Johnson's-pl., u.t. 19½ yrs., g.r. 5*l.*, w.r. 54*l.* 12s.	280

By S. B. CLARK & SON.

Regent's Park.—6, York-ter., u.t. 16 yrs., g.r. 10*l.* 10s., p.	1,780
Hyde Park.—71, Westbourne-ter., u.t. 32½ yrs., g.r. 21*l.*, y.r. 200*l.*	2,165

By BUNCH & DUKE.

Streatham.—28, 30, and 32, Greyhound-la., u.t. 61½ yrs., g.r. 19*l.* 10s., y.r. 120*l.* £715
19 and 21, Colmer-rd., u.t. 61½ yrs., g.r. 6*l.* 10s., w.r. 49*l.* 8s. 255
Clapton.—1, 3, 4, 5, 6, and 7, Lawley-st., u.t. 69 yrs., g.r. 30*l.* 10s., y.r. 204*l.* 1,850
Stoke Newington.—13, Benthal-rd., u.t. 69½ yrs., g.r. 5*l.*, y.r. 32*l.* 335

By E. H. HENRY.

Clapham Common.—West Side, "Devon House," f., p. 2,990

By MARK HUBBARD.

Kentish Town.—2 and 4, Boscastle-rd., u.t. 47½ yrs., g r. 12*l.*, y.r. 115*l.* 1,200

By HUMBERT & FLINT.

Marlow, Bucks. — Station-rd., "Seeburn House" with contractor's yard, f., y.r. 24*l.* 535
High-st., two freehold corner s., y.r. 32*l.* .. 685
63, 64, and 65, High-st. (s.), f., y.r. 99*l.* 2,080
66, High-st., f., y.r. 28*l.* 490
Institute-rd., f.g r. 5*l.*, reversion in 75¼ yrs. 125
Station-rise, two freehold building plots .. 100
62, High-st. (s.) f., y.r. 55*l.* 900
53, High-st., with builder's yard, f., y.r. 40*l.* 960
52, High-st. (s.), f., y.r. 18*l.* 420
High-st., two freehold s., and stables, y.r. 68*l.* 1,475
46, 49, and 50, High-st. (s.), f., y.r. 111*l.* .. 2,500
High-st., f.g.r. 48*l.*, reversion in 67 yrs. .. 1,220
High-st., freehold shop and premises, y.r. 30*l.* 610
Market-sq., three freehold s. and premises, y.r. 155*l.* 3,590
Market-sq., freehold shop, slaughter house, etc., y.r. 67*l.* 1,600
Spital-st., two freehold s., y.r. 59*l.* 1,275
Spital-st., five cottages and three s., f., y.r. 59*l.* 950
Spital-st., smithy, workshops, and two cottages, f., y.r. 25*l.* 540
Crown-la., two cottages and barn, f., w.r. 27*l.* 6s. 300
Chapel-st., freehold workshop and smithy, y.r. 12*l.* 200
Chapel-st., sixteen freehold cottages, w.r. 161*l.* 5s. 1,575
Chapel-st., freehold house and shop, y.r. 18*l.* 330
Chapel-st., freehold house and builder's yard, y.r. 20*l.* 490

April 13.—By BALCH & BALCH.

Kentish Town.—Dartmouth Pk. Hill, "Dartmouth Tower," u.t. 47 yrs., g.r. 10*l.*, p... 1,550
100, Gaisford-st., u.t. 44 yrs., g.r. 8*l.* 8s., y.r. 48*l.* 455
Camden Town.—1A, Murray-st., u.t. 40 yrs., g.r. 10*l.*, y.r. 48*l.* 355

By J. BARTON & CO.

Southwark.—23, 24, and 26, Colnbrook-st., u.t. 23½ yrs., g.r. 15*l.*, y.r. 126*l.* 985
Camberwell.—37, Grosvenor-pk., u.t. 14 yrs., g.r. 5*l.*, y.r. 38*l.* 195
Poplar.—36 and 38, Brunswick-st., f., w.r. 57*l.* 4s. 585

By NEWBON, EDWARDS, & SHEPHARD.

Bayswater.—44, Archer-st. (s.), u.t. 38½ yrs., g.r. 7*l.* 7s., y.r. 55*l.* 250
86, Archer-st. (s.), u.t. 39½ yrs., g.r. 5*l.*, y.r. 50*l.* 470
Islington.—54, Britannia-row, f., w.r. 33*l.* 16s. 325
Highbury.—10, Myrtle-st., f., w.r. 23*l.* 8s. .. 225
Barnsbury.—1, Copenhagen-st. (s.), u.t. 14 yrs., g.r. 4*l.*, y.r. 50*l.* 185
Canonbury.—20, Petherton-rd, u.t. 44½ yrs., g.r. 9*l.* 9s., e.r. 80*l.* 550
Clapton.—166, Glyn-rd. (s.), f., y.r. 45*l.* 650
Homerton.—24, 26, and 28, Digby-rd., f., w.r. 78*l.* 870
Bow.—83, Tredegar-rd., f., y.r. 34*l.* 515
Forest Gate.—23 and 25, Brownlow-rd., f., w.r. 46*l.* 16s. 410
Ilford.—56, Cambridge-rd., u.t. 991 yrs., g.r. 5*l.* 1s., e.r. 26*l.* 230

By STIMSON & SONS.

Walworth.—33, Penrose-st., area 3,200 ft., f., e.r. 50*l.* 630
Camberwell. — 22, D'Eynsford-rd., and 2, Kimpton-rd., u.t. 48½ yrs., g.r. 6*l.*, w.r. 74*l.* 2s. 555
Peckham.—7, Peckham-rye (s.), u.t. 29½ yrs., g.r. 6*l.* 10s., y.r. 50*l.* 760
241 and 243, Hollydale-rd., u.t. 67½ yrs., g.r. 4*l.* 13s. 4d., w.r. 65*l.* 520
Beckenham.—95 and 97, Mackenzie-rd., u.t. 79½ yrs., g.r. 9*l.*, w.r. 62*l.* 8s. 400
Acton.—15, York-rd., u.t. 63 yrs., g.r. 6*l.* 6s., w.r. 36*l.* 8s. 215
Tottenham.—9 to 17 (odd), Fairbourne-rd., u.t. 92½ yrs., g.r. 30*l.*, y.r. 182*l.* 1,050
Stratford.—27, Hamfrith-rd., f., e.r. 36*l.* 520
Walthamstow.—Manby-rd., six freehold building plots 110

By H. J. BLISS & SONS.

Bromley-by-Bow.—38 and 40, Spey-st., u.t. 60 yrs., g.r. 6*l.* 4s., w.r. 67*l.* 12s. 480
Hackney.—59 and 61, Frampton Park-rd., u.t. 32½ yrs., g.r. 10*l.* 10s., w.r. 104*l.* 450
Old Ford.—5, 7, 9, and 11, Monteith-rd., f., w.r. 105*l.* 6s. 1,140
Woodford.—Clarendon-rd., a freehold building plot 120

By JOSEPH STOWER.

Wandsworth. — Garrett-la., "Dunt's Hill House" (site of), area 3½ acres, f., p..... 3,500

By DANIEL WATNEY & SONS.

City of London.—36 and 37, King-st.; 12, Trump-st., and 4, 4½, and 5, Lawrence-la., area 4,080 ft., building lease for 80 yrs., let at per annum 2,225

By WM. WESTON.

Gray's Inn-road.—25, Acton-st., u.t. 37 yrs., g.r. 7*l.* 10s., p..... 500

By FAREBROTHER, ELLIS, & CO.

West Kensington.—40, 42, 45, 58, 59, 60, 67, 72, 73, and 74, Edith-rd., u.t. 70 yrs., g.r. 114*l.* 10s., y.r. 565*l.* (in lots)..... 5,050
21, 39, and 45, Talgarth-rd., u.t. 70 yrs., g.r. 30*l.*, y.r. 165*l.* 1,295

April 14.—By CHADWICK & SONS.

Lewisham.—2, 3, 5, and 6, Mercia-gr., u.t. 27 yrs., g.r. 16*l.*, w.r. 132*l.* 12s. £470
4, Eastdown-pk., f., y.r. 45*l.* 560
47 and 49, Eastdown-pk., f., y.r. 85*l.* 820
Eastdown-pk., a freehold building site 440
22 and 24, Westeria-rd., f., y.r. 65*l.* 720
Sutton, Surrey.—1 to 5, Palmerston-cottages, f., w.r. 83*l.* 4s. 560

By NICHOLAS, DENYER, & CO.

Tenterden, Kent.—"Belcot Farm," 68 a. 2 r. 28 p., f., p. 1,850
Kennardington, Kent. — "The Firs" and 0 a. 2 r. 0 p., f., p. 525
Walworth.—223, Hillingdon-st., u.t. 45½ yrs., g.r. 4*l.*, w.r. 36*l.* 8s. 250

By SHADRAKE & TAYLOR.

Leyton.—213 and 215, Vicarage-rd., u.t. 91½ yrs., g.r. 11*l.*, y.r. 50*l.* 400

By WRIFORD, DIXON, & WINDER.

Belgravia.—67, Eccleston-sq.-mews, u.t. 22 yrs., g.r. nil, y.r. 45*l.* 355
Hyde Park.—8, Junction-mews, u.t. 24 yrs., g.r. nil, y.r. 35*l.* 205
Victoria Park.—118, Grove-rd., u.t. 38 yrs., g.r. 4*l.* 4s., y.r. 34*l.* 305
197 and 199, Grove-rd., u.t. 31 yrs., g.r. 10*l.*, y.r. 72*l.* 16s. 500

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for office; s. for shops; ct. for court.

MEETINGS.

APRIL 20 TO 25.

Architectural Association Camera and Cycling Club.—Easter Excursion: Hereford, etc.

SATURDAY, APRIL 22.

Edinburgh Architectural Association.—Visit to Drum House, Gilmerton.

THURSDAY, APRIL 27.

Institution of Electrical Engineers.—Discussion of Mr. B. J. Arnold's Address to the Joint Meeting at St. Louis "On the Problem of the Alternate Current Motor Applied to Traction," and Mr. F. Creedy's Paper "The Alternate-Current Series Motor." 8 p.m.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum. Remittances (payable to J MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder" by *Friday Morning's Post.*

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.			
Hard Stocks.	1	10	0	per 1000	alongside,	in river.
Rough Stocks and Grizzles	1	6	6	,,	,,	,,
Facing Stocks ...	2	2	0	,,	,,	,,
Shippers	2	2	0	,,	,,	,,
Flettons	1	7	0	,,	at railway depôt.	
Red Wire Cuts ...	1	14	0	,,	,,	,,
Best Fareham Red	3	12	0	,,	,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,,	,,
Best Blue Pressed Staffordshire ...	4	2	6	,,	,,	,,
Do. Bullnose	4	7	6	,,	,,	,,
Best Stourbridge Fire Bricks.....	4	0	0	,,	,,	,,
GLAZED BRICKS.						
Best White and Ivory Glazed Stretchers	12	0	0	,,	,,	,,
Headers	11	0	0	,,	,,	,,
Quoins, Bullnose, and Flats.....	16	0	0	,,	,,	,,
Double Stretchers	19	0	0	,,	,,	,,
Double Headers...	16	0	0	,,	,,	,,
One Side and two Ends	19	0	0	,,	,,	,,
Two Sides and one End	20	0	0	,,	,,	,,
Splays, Chamferred, Squints	20	0	0	,,	,,	,,
Best Dipped Salt Glazed Stretchers, and Header	12	0	0	,,	,,	,,
Quoins, Bullnose, and Flats.....	14	0	0	,,	,,	,,
Double Stretchers	15	0	0	,,	,,	,,
Double Headers...	14	0	0	,,	,,	,,
One Side and two Ends	15	0	0	,,	,,	,,
Two Sides and one End	15	0	0	,,	,,	,,
Splays, Chamferred, Squints	14	0	0	,,	,,	,,
Second Quality White and Dipped Salt Glazed	3	0	0	,,	less than best.	

BRICKS, &c. (*continued*).

	s.	d.		
Thames and Pit Sand.....	7	0	per yard,	delivered.
Thames Ballast.....	5	9	,,	,,
Best Portland Cement	27	0	per ton,	,,
Best Ground Blue Lias Lime	20	0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.		
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.	
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	,,	,,
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2	1	,,	,,
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2	2½	,,	,,

	s.	d.			
Ancaster in blocks.....	1	11	per ft. cube,	deld. rly. depôt.	
Beer ,, ...	1	6	,,	,,	
Greenshill ,, ...	1	10	,,	,,	
Darley Dale in blocks...	2	4	,,	,,	
Red Corsehill ,,	2	5	,,	,,	
CloseburnRedFreestone	2	0	,,	,,	
Red Mansfield ,,	2	4	,,	,,	
YORK STONE—*Robin Hood Quality.*					
Scappled random blocks	2	10	,,	,,	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super.	,,	
6 in. rubbed two sides ditto, ditto	2	6	,,	,,	
3 in. sawn two sides slabs (random sizes)	0	11½	,,	,,	
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	,,	,,	
1½ in. to 2 in. ditto, ditto	0	6	,,		
HARD YORK—					
Scappled random blocks	3	0	per ft. cube,		
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2	8	per ft. super.	,,	
6 in. rubbed two sides ditto	3	0	,,	,,	
3 in. sawn two sides (slabs random sizes)	1	2	,,	,,	
2 in. self-faced random flags	0	5	,,	,,	

	s.	d.		
Hopton Wood (Hard Bed) in blocks	2	3	per ft. cube,	deld. rly. depôt.
,, ,, ,, 6 in. sawn both sides landings	2	7	per ft. super.	deld. rly. depôt.
,, ,, ,, 3 in. do.	1	2½	,,	,,

SLATES.

in.	in.	£	s.	d.		
20 × 10 best blue Bangor		13	2	6	per 1000 of 1200 at r. d.	
20 × 12 ,, ,,		13	17	6	,,	,,
20 × 10 first quality ,,		13	0	0	,,	,,
20 × 12 ,, ,, ,,		13	15	0	,,	,,
16 × 8 ,, ,, ,,		7	5	0	,,	,,
20 × 10 best blue Portmadoc		12	12	6	,,	,,
16 × 8 ,, ,,		6	12	6	,,	,,
20 × 10 best Eureka unfading green .		15	17	6	,,	,,
20 × 12 ,, ,,		18	7	6	,,	,,
18 × 10 ,, ,,		13	5	0	,,	,,
16 × 8 ,, ,,		10	5	0	,,	,,
20 × 10 permanent green		11	12	6	,,	,,
18 × 10 ,, ,,		9	12	6	,,	,,
16 × 8 ,, ,,		6	12	6	,,	,,

TILES.

	s.	d.		
Best plain red roofing tiles .	42	0	per 1000 at	rly. depôt.
Hip and Valley tiles ...	3	7	per doz.	,, ,,
Best Brosely tiles.....	50	0	per 1000	,, ,,
Do. Ornamental tiles	52	6	,,	,, ,,
Hip and Valley tiles ...	4	0	per doz.	,, ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	,, ,,
Do. Ornamental do	60	0	,,	,, ,,
Hip tiles	4	0	per doz.	,, ,,
Valley tiles	3	0	,,	,, ,,
Best Red or Mottled Staffordshire do. (Peakes).....	51	9	per 1000	,, ,,
Do. Ornamental do.....	54	6	,,	,, ,,
Hip tiles	4	1	per doz.	,, ,,
Valley tiles	3	8	,,	,, ,,
Best "Rosemary" brand plain tiles.....	48	0	per 1000	,, ,,
Best Ornamental tiles	50	0	,,	,, ,,
Hip tiles	4	0	per doz.	,, ,,
Valley tiles	3	8	,,	,, ,,
Best "Hartshill" brand plain tiles, sand faced.	50	0	per 1000	,, ,,
Do. pressed.....	47	6	,,	,, ,,
Do. Ornamental do	50	0	,,	,, ,,
Hip tiles	4	0	per doz.	,, ,,
Valley tiles	3	6	,,	,, ,,

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13	10	0	15	0	0
Deals: best 3 by 9.....	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6 ..	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	,,	,,	,,
2 in. by 4 in. and 2 in. by 6 in....	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in....	8	10	0	9	10	0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	,,		

WOOD (*continued*).

BUILDING WOOD *(continued)*	At per load of 50 ft. £ s. d.	£ s. d.
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 0 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 10 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0
JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 3 in. by 11 in	24 0 0	25 0 0
3 in. by 9 in.	22 0 0	23 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	18 0 0
Second yellow deals, 3 in by 11 in.	18 10 0	20 0 0
" 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	14 0 0
Do. 3 in. by 9 in.	12 10 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg :—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" 3 in. by 9 in.	12 10 0	13 10 0
" battens	10 0 0	11 0 0
Pitch-pine: deals	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	40 0 0	upwards.
Oddments	28 0 0	"
Seconds, regular sizes	30 0 0	"
Yellow Pine oddments	25 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak Logs— Large, per ft. cube	0 3 0	0 3 6
Small " "	0 2 6	0 2 9
Wainscot Oak Logs, per ft. cube.	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 9
¾ in. do. do.	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks, per ft. cube	0 4 0	0 5 0
Prepared Flooring, etc.—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do, do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	5 15 0 ...	6 15 0
Compound Girders, ordinary sections	7 5 0 ...	8 7 6
Steel Compound Stancheons	9 2 6 ...	10 12 6
Angles, Tees and Channels, ordinary sections	7 7 6 ...	8 7 6
Flitch Plates	7 15 0 ...	8 5 0
Cast Iron Columns and Stanchions including ordinary patterns	6 12 6 ...	7 15 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 0 0 ...	7 10 0
Staffordshire Crown Bars, good merchant quality	7 10 0 ...	8 0 0
Staffordshire "Marked Bars"	9 10 0 ...	—
Mild Steel Bars	8 5 0 ...	8 15 0
Hoop Iron, basis price	8 15 0 ...	9 0 0
" " Galvanized	16 10 0 ...	—
(*And upwards, according to size and gauge.)		
Sheet Iron, Black— Ordinary sizes to 20 g.	9 0 0 ...	—
" " 24 g.	10 0 0 ...	—
" " 26 g.	11 15 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 10 0 ...	—
Ordinary sizes to 22 g. and 24 g.	13 0 0 ...	—
" " 26 g.	14 0 0 ...	—
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	15 10 0 ...	—
" " 22 g. and 24 g.	16 0 0 ...	—
" " 26 g.	17 10 0 ...	—
Galvanised Corrugated Sheets— Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0 ...	—
" " 22 g. and 24 g.	13 0 0 ...	—
" " 26 g.	13 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 0 0 ...	—
" " " 26 g.	13 10 0 ...	—
Cut nails, 3 in. to 6 in.	9 0 0 ...	9 10 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up	15 7 6 ...	—
Pipe in coils	15 17 6 ...	—
Soil pipe	18 7 6 ...	—
Compo pipe	18 7 6 ...	—
ZINC—Sheet— Vieille Montagne ton	30 15 0 ...	—
Silesian	30 10 0 ...	—
COPPER— Strong Sheet per lb.	0 0 10 ...	—
Thin " "	0 0 11 ...	—
Copper nails "	0 0 10 ...	—
BRASS— Strong Sheet "	0 0 9½ ...	—
Thin " "	0 0 10 ...	—
TIN—English Ingots "	0 1 4½ ...	—
SOLDER—Plumbers' "	0 0 6½ ...	—
Tinmen's "	0 0 8 ...	—
Blowpipe "	0 0 9 ...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d. per ft. delivered.
" fourths	2d. " "
21 oz. thirds	3¾d. " "
" fourths	3d. " "
26 oz. thirds	4¾d. " "
" fourths	3¾d. " "
32 oz. thirds	5¾d. " "
" fourths	5d. " "
Fluted Sheet, 15 oz.	3½d. " "
" 21 oz.	4½d. " "
⅛ Hartley's Rolled Plate	2d. " "
⅛ " " "	2½d. " "
¼ " " "	2½d. " "

OILS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 1 7
" " " in barrels "	0 1 8
" " " in drums "	0 1 10
Boiled " " in pipes "	0 1 9
" " " in barrels "	0 1 10
" " " in drums "	0 2 0
Turpentine, in barrels "	0 3 6
" in drums "	0 3 8
Genuine Ground English White Lead per ton	19 15 0
Red Lead, Dry "	19 5 0
Best Linseed Oil Putty per cwt.	0 6 6
Stockholm Tar per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXVII. (July to December, 1904) was given as a supplement with the issue for January 14 last.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-SEVENTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

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Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page, and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BECCLES.—For erecting house, Pudding Moor, Beccles, for Mr. G. Mouel. Mr. A. Pells, architect, Beccles:—

Hindes & Co.	£370	Hipperson Bros.,	
C. Betts	319	Beccles*	£298

BECCLES.—For additions and alterations at Beaumont House, London-road, Beccles, for Mr. W. Robinson. Mr. A. Pells, architect:—

H. A. King	£279 17 0
G. Johnson, Beccles*	176 5 6

BERROW (Somerset).—For alterations and additions to "South Farm," the residence of Mr. R. W. C. Evered. Mr. J. W. Hill, architect. Quantities supplied:—

Lynham	£385	Gleed Bros.*	£340
Roberts	350		

BRIDGWATER (Somerset).—For road-making, channel, kerb, asphalte paving and drains on the Ashleigh Estate, for Mr. Albert Lewis (second contract). Mr. J. W. Hill, Surveyor:—

Bryer	£466	Gleed Bros.*	£457

BRIDGWATER (Somerset).—For the erection of five terrace houses in Ashleigh-road, for Mr. Albert Lewis. Mr. J. W. Hill, architect. Quantities supplied:—

Stockham	£1,799	Bryer	£1,495
Scott	1,682	Fursland	1,250
Geen	1,650	Gleed Bros.*	1,199

CANTON.—For erecting artisans' dwellings at Wellington-street, for the Cardiff Corporation. Mr. W. Harpur, Borough Engineer, Town Hall, Cardiff:—

J. H. Maggs & Co.	£3,609 0 0	Knox & Wells	£2,750 0 0
G. Griffiths & Son	3,282 0 0	W. C. Ransom	2,700 0 0
G. Burgess	3,050 0 0	W. T. Morgan	2,700 0 0
C. C. Dunn	3,000 0 0	T. C. Clouter	2,600 0 0
North & Stephens	2,974 7 5	J. H. Venning	2,595 5 10
		J. Blight	2,280 0 0
		F. Bond	2,240 0 0
		F. Small	2,175 0 0

[All of Cardiff.]

[Borough Engineer's estimate, £2,300.]

COVENTRY.—For pulling down old premises, and erecting new shops and houses, etc., for Coventry Co-operative Society, Ltd. Messrs. Harrison & Hattrell, architects, 23, Hertford-street, Coventry:—

R. Wootton	£1,695 0 0	J. Worwood	£1,597 0 0
C. G. Hill	1,675 0 0	A. A. Wincott	1,595 0 0
C. Haywood	1,674 10 0	Ault	1,569 0 0
R. Cleaver	1,650 0 0	Goode & Shaw	1,555 0 0
Lord	1,635 0 0	Bowles & Son	1,550 0 0
Hancox & Co.	1,633 0 0	E. Harris	1,500 0 0
Exors. of the Co. (late C. Garlick)	1,620 0 0	C. Blockley, Stoke, near Coventry*	1,442 3 3
Kelley & Son	1,605 10 6		

COWPEN.—For (1) making the following streets, viz.:—Phœnix-street and Back Elliott-street, Newsham; and Back Waterloo-road and Back Turner-street, Waterloo. (2) Providing and laying about 520 lineal yds. of kerb at Bebside, for the Urban District Council. Mr. R. Grieves, Surveyor, Seaforth-street, Waterloo, Blyth:—

	New Streets.	Kerb Laying.
J. Thompson	£446 10 1	£108 1 4
G. E. Simpson	368 18 7	116 0 0
McLaren & Co.	351 0 7	100 14 8
J. Robson, Newcastle-on-Tyne*	308 9 1	95 4 0

DARTFORD.—For iron and steelwork for new deck house to Pontoon, Long Reach Hospital, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in Chief:—

T. Davies, Ltd.	£530 0	W. J. Fraser & & Co., Ltd.	£272 0
Power's & Deane, Ransome's, Ltd.	317 0	Boulton & Paul, Ltd.	220 5
Westwood & Wright's	314 0	Cross & Cross	213 0
W. A. Baker & Co., Ltd.	300 0	G. Sands & Son	202 4
Drew-Bear Perks, & Co., Ltd.	283 0	Peirson & Co., 17 and 18, St. Dunstan's-hill, E.C.*	199 0

DITCHINGHAM.—For new system of drainage, etc., at All Hallows Country Hospital. Mr. A. Pells, architect, Beccles:—

A. King	£324 0	G. Elsey	£245 0
A. G. Beckett	305 0	H. A. King	232 18
E. Tabor	266 0	A. B. Read	232 4
A. D. Body & Sons	265 0	J. J. Doe, Broome*	205 0
Atherton & Co.	250 0	Gardiner & Son	175 0
		F. Brown	170 0

EAST MOLESEY.—For erecting house and premises, for Mr. C. W. Kent. Mr. D. G. Andrew, architect, Bridge-road, East Molesey:—

E. Patterton	£1,920	Butt Bros.	£1,425
Braid, Pater, & Co.	1,649	J. Wheatley & Sons, Ltd.	1,337
R. Atkinson	1,560	J. H. Tanner & Co.	1,250
J. Hebbethwaite	1,533		
Baily & Fry	1,450		

HOVE (Sussex).—For providing and laying tar-paving on King's Gardens Esplanade. Mr. H. H. Scott, Borough Surveyor:—

Dowley Daniel, Ltd., 1, Uxbridge-road, Shepherd's Bush, London, W. £672 17 9

ILFORD.—For levelling and tar-paving playgrounds of the Highlands Schools, Cranbrook Park, for the Urban District Council. Mr. C. J. Dawson, architect, 11, Cranbrook-road, Ilford:—

F. G. Sheppard & Co., Southend £530

TENDERS.—*Continued on page* 453.

COMPETITIONS AND CONTRACTS.

(For some Contracts, etc., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*Plans for Schools	Derbyshire Education Committee..	Not stated	May 31

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tenders, etc., supplied by	Tenders to be Delivered
Pump House, Quay Walls, etc., at Generating Station	Belfast Tramways, etc., Committee	City Surveyor's Office, Town Hall, Belfast	April 24
Villa Residence, Regent-street, Kingswood	Dr. C. J. Perrott	J. MacKay, Architect and Surveyor, Regent-st., Kingswood, Bristol	do.
Sewage Pumping Plant	Haverhill U.D.C.	F. W. Knewstubb, Engr. & Sur., Council Offices, Haverhill, Suffolk	do.
1,200 tons of Whin Metal	Wishaw Town Council	W. Rodger, Burgh Surveyor, Wishaw	do.
District Library, Pollokshields	Glasgow Corporation	Office of Public Works, 64, Cochrane-street, Glasgow	April 25
Constructing Road (Victoria-avenue)	Manchester Paving Committee	City Surveyor's Office, Town Hall, Manchester	do.
Girder Bridge over Wansbeck at Low Angerton	Morpeth R.D.C.	J. M. MacGregor, District Surveyor, 14, Market-place, Morpeth	do.
Masonry Bridge over River Font at Shelly	do.	do.	do.
Granite, Limestone, and Dross	Hunslet R.D.C.	W. B. Pindar, Clerk, Glasshouse-street, Hunslet, Leeds	do.
*Entrance Gates and Boundary Wall, West Norwood	Lambeth Guardians	Clerk to Guardians, Brook-street, Kennington-road, S.E.	April 26
Road Works, Station-road, Long Benton	Tynemouth R.D.C.	A. S. Dinning, 21, Ellison-place, Newcastle-on-Tyne	do.
300 lineal yds. of 9-in. Pipe Sewer	do.	do.	do.
Boundary Walls, etc., at Engineer's Institute, Park-pl.	Cardiff Corporation	W. Harpur, Borough Engineer, Town Hall, Cardiff	do.
Cellaring under the Shambles	Burslem Corporation	F. Bettany, Borough Engineer, Municipal Offices, Burslem	do.
Warehouse, Knockando Distillery		C. C. Doig, Architect, Elgin	do.
Painting at Infirmary, Mill-road, Liverpool	West Derby Guardians	Steward's Office at Infirmary	do.
120 tons of Purifying Lime	North Berwick Town Council	A. D. Wallace, Town Clerk, North Berwick	do.
Council School, Tiverton-road, Selly Oak	King's Norton & Northfield U.D.C.	J. F. Moore, Secretary, Education Offices, King's Norton, B'ham	do.
403 lineal yds. of Wrought-Iron Fencing	Rochdale General Purposes Com.	S. S. Platt, Borough Surveyor, Town Hall, Rochdale	do.
Flints	South Stoneham R.D.C.	W. J. Potter, Dis. Surv., "Glenroy," Portswood, Southampton	do.
Carting Gravel, etc.	do.	do.	do.
Rag and Block Stone	Justices, etc., Sewers, Gravesend, etc.	E. L. Baker, Clerk to Commissioners, The Precinct, Rochester	do.
Plant and Appliances	Marple U.D.C.	J. R. Mackenzie, Gas Engineer, Marple Bridge, near Stockport	do.
Conversion of Gasholder Tank into Tar, etc., Tank	do.	do.	do.
Filtering Material, Slack Brook Sewage Works	Swinton and Pendlebury U.D.C.	H. Entwisle, Council Offices, Swinton, near Manchester	do.
Collecting House Refuse	Hampton U.D.C.	S. H. Chambers, Surveyor, Public Offices, Hampton, Middlesex	April 27
Closets, etc., and Aspha., Cridling Stubbs Prov. Schls.	West Riding Education Committee	J. Vickers Edwards, County Architect, County Hall, Wakefield	do.
Six New Classrooms, Thurnscoe Provided Schools	do.	do.	do.
Asphalting Playgrounds, Swinton Roman-ter. School	do.	do.	do.
Drainage, Swinton Roman-terrace School	do.	do.	do.
Forming and Paving Streets and Passages	Warrington Paving Committee	T. Longdin, Borough Engineer, Town Hall, Warrington	do.
Brick Boundary Wall, Dane-road	Sale U.D.C.	W. Holt, Surveyor, Council Offices, Sale	do.
Limestone Asphalting of Footpaths	do.	do.	do.
Granite and Granite Chippings	Wellingborough U.D.C.	J. T. Parker, Clerk, 29, Church-street, Wellingborough	do.
Settling Tanks, near Auchencorth, Harlawmoor	Edinburgh & District Water Trustees	W. A. Tait, C.E., 72A, George-street, Edinburgh	do.
6,600 tons of Filtering Sand, Alnwick-hill	do.	do.	do.
Paving Streets	Gateshead Corporation	N. P. Pattinson, Borough Engineer, Town Hall, Gateshead	do.
Stores, Police Department	Glasgow Corporation	D. M'Coll, 38, Cochrane-street, Glasgow	do.
15-ton Overhead Hand Travelling Crane	Wimbledon U.D.C.	H. Tomlinson-Lee, Electricity Works, Durnsford-rd., Wimbledon	April 28
Colliery Offices, Chopwell	Consett Iron Co.	C. E. Oliver, General Offices, Consett	do.
Twenty-nine Houses at Pontllanfraith and Tredegar	Tredegar Junction No. 3 Bldg. Club	W. A. Griffiths, Architect, Pontllanfraith, Mon.	do.
Street Works, Bankside, etc.	Hull Corporation	A. E. White, City Engineer, Town Hall, Hull	do.
565 tons of Broken Leicester Granite	Gildersome U.D.C.	H. B. James, Clerk, Council Offices, Gildersome	do.
Conveniences, Brookdale Park	Manchester Parks Committee	City Architect, Town Hall, Manchester	do.
Cement Pavements, Footpaths, and Kerbs	Dunblane Town Council	D. T. Reid, Town Clerk, Dunblane	April 29
Feeder Cables, etc. (Christch. Tramways, Contract 5)	Bournemouth Corporation	Lacey, Sillar, & Leigh, 2, Queen Anne's-gate, Westminster, S.W.	do.
Eleven Electric Cars (Contract 6)	do.	F. W. Lacey, M.Inst.C.E., Municipal Offices, Bournemouth	do.
Painting, etc., of Town Hall and Assize Courts	Kingston-on-Thames Corporation	Borough Surveyor's Office, Municipal Offices, Kingston-on-Thames	do.
Two Dwelling-houses, Ive House-lane, Luddenden		T. Kershaw, Architect & Surveyor, L. & Y. Bank-chbrs., Halifax	do.
Business Premises and Dwelling-ho., High-st., Forres	Mr. R. A. Gray	J. Forrest, Architect and Surveyor, Forres	do.
Four Villas, Headingley		J. Charles & Sons, 98, Albion-street, Leeds	do.
1,300 tons of Unbroken Whinstone	Great Driffield U.D.C.	G. B. Tonge, Clerk, Great Driffield	do.
Jobbing Work	Glasgow Corporation	Office of Public Works, City-chambers, 64, Cochrane-st., Glasgow	do.
Paving Work	do.	do.	do.
Stores, Water Department	do.	J. R. Sutherland, Water Engineer, 45, John-street, Glasgow	do.
1,000 tons of Portland Cement	Torquay Town Council	S. C. Chapman, Water Engineer, Torquay	May 1
Girls' School for 398, High-street, Barry	Barry U.D.C.	G. A. Birkenhead, Architect, Caledonian-chambers, Cardiff	do.
Baptist Church, Doncaster		J. Wills & Sons, Architects, Derby	do.
Griffin's-court Improvement	New Sarum Town Council	City Surveyor, Endless-street, Municipal Offices, Salisbury	do.
Additions, etc., Druid's Hall, Redruth	Redruth Public Rooms Co., Ltd.	H. W. Collins, Architect, Clinton-road, Redruth	do.
Scavenging, Cambuslang		J. T. T. Brown, 97, West Regent-street, Glasgow	do.
Furniture for Art School	Bradford Education Committee	Education Offices, Manor-row, Bradford (Architect's Department)	do.
Taking Down, Re-erect. Iron Building, Westfield, Wyke	do.	do.	do.
Annual Contracts	Portsmouth Corporation	V. G. Lironi, Engr., Tramways Engr's. Office, Fratton, Portsmouth	do.
Paving, Kerbing, Channeling	Rhymney U.D.C.	W. Lloyd Marks, Surveyor, 61, High-street, Rhymney	do.
2,500 tons of Broken Limestone	do.	do.	do.
Sewerage Extension, Abertysswg	do.	do.	do.
Street Improvements, Smawthorne-grove, etc.	Castleford U.D.C.	W. Green, Surveyor to Council, Castleford	do.
Private Street Improvement Works	Prestwich U.D.C.	Surveyor, Chester Bank, Prestwich	do.
*Painting, etc., at Colindale-ave Asylum, Hendon	Mgrs. of Cen. London Sick Asy. Dis.	W. Lockwood, Architect, 3, Great Marlborough-street, W.	do.
Construction of Wincobank-avenue and Foxglove-road	Sheffield Health Committee	C. F. Wike, City Surveyor, Town Hall, Sheffield	May 2
Stores and Works	Metropolitan Water Board	A. B. Pilling, Clerk, Savoy-court, Strand, W.C.	do.
Making Silverdale-street	Kempston U.D.C.	E. H. C. Inskip, Surveyor, Bedford-road, Kempston	do.
Waterworks, Union Workhouse, Wareham	Wareham and Purbeck Guardians	Master of Workhouse, Wareham	May 3
Steel Curved Girder Bridge	Salop C.C.	A. T. Davis, County Surveyor, Shirehall, Shrewsbury	do.
Steel Material	East India Ry. Co.	C. W. Young, Secretary, Nicholas-lane, London, E.C.	do.
Miscellaneous Tools	do.	do.	do.
Alters., etc., of Infirm. Wards, Withington Workho.	Chorlton Guardians	C. Clegg & Sons, Architects, 104, King-street, Manchester	do.
Water Van	Littlehampton U.D.C.	A. Shelley, Clerk, Town Offices, Littlehampton	do.
500 tons of Flints	do.	do.	do.
*Repairs to Roads at Downs School, Sutton	Metropolitan Asylums Board	Office of the Board, Embankment, E.C.	do.
*Painting, etc., Works, Herne Bay and Witham	do.	do.	do.
*Large Heater-room at Fever Hospital, Woolwich	do.	do.	do.
Stores	Great Indian Peninsula Ry. Co.	J. I. Berry, Secretary, 48, Copthall-avenue, E.C.	May 4
Sewage Works at Ellesmere Port	Manchester Ship Canal	W. H. Hunter, Engineer, 41, Spring-gardens, Manchester	do.
Making-up Station-road and Whitefriars-crescent	Southend-on-Sea Corporation	E. J. Elford, Borough Surveyor, Southend-on-Sea	do.
Bridge over Longnor Brook	Cannock and Stafford R.D.C.	H. M. Whitehead, Engineer, Council Offices, Penkridge, Stafford	May 5
*Supply of Deals and Matched Boarding	Ordnance Survey	Officer in Charge of Stores, Ordnance Survey Office, Southampton	do.
Additions, etc., Royal Cornwall Sailors' Home	Directors of Home	At the Home, Falmouth	May 6
Hospital	do.	do.	do.
Petrol-Driven Railway Motor Coach	South Australian Government	H. A. Grainger, Threadneedle House, Bishopsgate-st. Within, E.C.	May 8
Water-Tube Boilers	Edinburgh Corporation	Engineer, Dewar-place, Edinburgh	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be Delivered
Hauling	Woodbridge R.D.C.	G. Cook, District Surveyor, Grundisburgh, near Woodbridge	May 9
*Extension of Electric Light Generating Station	Portsmouth Town Council	Town Hall, Portsmouth	do.
Furnishing Isolation (Fever) Hospitals at Sedgefield	Sedgefield R.D.C.	Mr. Chatterton, Clerk of Works, New Isol. Hospitals, Sedgefield	May 10
*Disinfection Station	Kensington Royal Borough Council	Borough Engineer & Surveyor, Town Hall, High-st., Kensington, W.	May 15
Small Auxiliary Goods Office, Grosvenor-st., Belfast	G.N. Ry. Co., Ireland	W. H. Mills, Engineer-in-Chief, Amiens-street Terminus, Dublin	do.
*Stoneware Ducts for Electric Cables	London C.C.	County Hall, Spring Gardens, S.W.	May 16
Stuartstown Railway	Natal Government	Consulting Engineer to Government, 39, Victoria-street, S.W.	July 17
4 to 6 miles Iron, etc., Fence, Meikleour Est., Perth	.....	J. Renton, 40, Tay-street, Perth	No date.
Wesleyan Sunday Schools, Temple-street, Keighley	.....	Wilson Bailey, Architect, Bradford and Keighley	do.
Engine Beds & Altering Boiler House, Garlands Asyl'm	Cumberland, etc., Jt. Lunatic Asyl'm	G. D. Oliver, County Architect, Carlisle	do.
20,000 Creosoted Memel Sleepers	Barry Railway Directors	Engineer, Barry Railway, Barry Docks	do.
Primitive Methodist Sunday School, Cleethorpes	.....	H. Harper, Architect, Market-place, Nottingham	do.
Slaters, etc., Work for 6 Houses, Woodside Est., Halifax	.....	M. H. Wilson, on the Estate	do.
Chimney Shaft, Ipswich	.....	Cranfield Bros., Dock Roller Mill, Ipswich	do.
*Founda., etc., Union Jack Club, Waterloo-rd. S.E.	.....	H. B. Measures, Architect, Atterbury-st., Grosvenor-rd., S.W.	do.

Those marked with an (*) are advertised in this number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, —

TENDERS—*Continued from page* 451.

HENDON.—For providing, laying, and jointing of about 200 yds. run of 2-in. cast-iron pipes and specials in the Public Park at Hendon; also for about 100 to 200 tons of best Portland cement (British standard specification), delivered to Hendon Station, Midland Railway, for the Urban District Council. Mr. S. S. Grimley, Engineer and Surveyor, Council Offices, The Burroughs, Hendon, N.W.:—

Providing, Laying, etc., about 200 *yds. of* 2-*in. Cast-Iron Pipes, etc.*

	Per yd. run. s.	d.
M. Webb	4	7
F. Fowles	4	6
Harding & Son	4	0
E. Tabor	3	10
W. Goad & Co., London*	3	4

About 100 *to* 200 *tons Portland Cement.*

	Cricklewood Station. Per ton. s.	d.	Hendon Station. Per ton. s.	d.
G. & T. Earle	43	4	43	5
L. Sommerfeld	35	0	35	0
J. Knowles & Co.	32	6	32	6
Comet Cement Co.	28	6	28	6
J. H. Sankey & Son	26	10	26	10
Saxon Portland Cement	27	1	26	3
Wouldham Cement Co.	27	0	27	0
Young & Marten	26	0	26	0
Associated Portland Cement Manufacturers	25	6	25	6
J. Ellis & Sons	35	6	35	6
Lawford & Sons	24	3	24	3
J. Williams & Co., Rotherhithe, S.E†	24	0	24	0

LONDON.—For making-up roadway and paving footways of Childerley-street, Fulham, for the Fulham Borough Council. Mr. Francis Wood, Borough Surveyor, Town Hall, Fulham, S.W.:—

	Roadway.	Footway.
H. Harvey Bros.	£566 12 0	£126 5 4*‡
A. B. Champniss	547 6 0	—
W. Neave & Sons	540 0 0	—
H. J. Greenham	434 0 0	—
J. Mears	431 0 0	—
G. Wimpey & Co.	427 0 0	—
F. Fowles	380 0 0*	—
Borough Surveyor	—	142 0 0*‖
Croft Granite Brick and Concrete Co., Ltd.	—	132 0 0§

‡ Shap adamant concrete flags, or North Wales Paving Co., Ltd. § Croft adamant flags. ‖ Clinker flags.

LONDON.—For the supply of electric lamps, for the London County Council:—

Edison & Swan United Electric Light Co.	£988	15	0
Sir Hiram-Maxim Electrical, etc., Co.	735	10	5
British Thomson-Houston Co.‡	722	7	11
Sunbeam Lamp Co.	689	15	10
General Electric Co., London*	662	10	0
Mackey's Electric Lamp Co.	656	7	1

‡ Tender not in order.

LONDON.—For painting work at Park Fever Hospital, Hither Green, S.E., for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief. Quantities by Mr. L. Jacob, Globe Chambers, 493, New Cross-road, S.E.:—

Langdon & Clark	£5,477	0	0
R. Dean & Co.	3,205	7	1
L. Kazak	2,917	2	10
J. S. Fenn	2,551	0	0
Higgs & Hill, Ltd.	2,444	0	0
Wontner & Co. Ltd.	2,365	0	0
R. & E. Evans	2,227	0	0
H. C. Horswill	£2,204	0	0
T. Cole	2,109	0	0
M. McCarthy	1,991	13	8
A. H. Inns	1,883	0	0
E. Proctor & Son	1,550	0	0
H. Kent, 17, Albion-rd., Lewisham, S.E*	1,535	0	0

LONDON.—For painting work at the Brook Fever Hospital, Shooter's Hill, Woolwich, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief. Quantities by Messrs. F. Taperell & Hoase, 9, Johnstreet, Adelphi, W.C.:—

R. Dean & Co.	£2,030	3	3
F. Smith & Co.	1,507	0	0
Wontner & Co., Ltd.	1,487	0	0
Higgs & Hill, Ltd.	1,444	0	0
E. Wall	1,332	0	0
H. C. Horswill	1,242	0	0
H. Kent	1,183	0	0
J. S. Fenn	1,182	9	0
A. H. Inns	£1,149	12	0
W. Mills	1,149	0	0
T. Cole	1,106	0	0
Enness Bros.	1,084	0	0
E. Proctor & Son	960	0	0
L. Kazak, 3 and 4, Station-road, Belvedere*	901	19	9

LONDON EDUCATION COMMITTEE TENDERS.

Woolwich, Timbercroft-road (Heating Apparatus).

W. G. Cannon & Sons	£965	0	
Stevens & Sons	827	0	
J. Grundy	797	0	
Brightside Foundry and Engineering Co., Ltd.	699	0	
Comyn, Ching, & Co., Ltd.	£670	10	
J. Yetton & Co.	650	0	
Wippell Bros. & Row, Exeter*	638	0	
A. Macintosh & Sons, Ltd.	584	0	

Peckham, Arthur-street (Additional Boiler, etc.).

J. Yetton & Co.	£475	0	
J. Grundy	397	0	
J. & F. May	366	0	
W. G. Cannon & Sons	359	0	
Palowkar & Sons	£313	0	
G. & E. Bradley	307	10	
J. Defries & Sons, Ltd., 147, Houndsditch*	306	0	

Chelsea, Park-walk (Laundry centre.)

J. & M. Patrick	£290		
T. Hooper & Son	290		
W. & C. Brown	282		
Lathey Bros.	246		
General Builders, Ltd.	237		
Thompson & Beveridge	£212		
E. Triggs	194		
S. Polden, Camden Works, Shepherd's Bush*	183		

Greenwich, Invicta-road (Science Room).

Belcher & Co., Ltd.	£357	15	
J. & C. Bowyer	237	0	
W. Downs	234	0	
H. Groves	228	0	
J. Smith & Sons, Ltd.	227	0	
Holliday & Greenwood, Ltd.	£212	0	
T. D. Leng	208	0	
J. Marsland & Sons, 1, York-street, Walworth*	199	0	

Islington, E., Gillespie-road (Re-arranging Stepping).

McCormick & Sons	£258		
J. Grover & Son	246		
J. Stewart	232		
J. Peattie	232		
G. S. Williams & Son	£212		
Stevens Bros.	209		
Marchant & Hirst, 136, Highgate-rd.*	196		

Outside the County, Kilburn-lane (Re-arranging Stepping).

G. H. Sealy	£292		
G. Neal	286		
W. R. & A. Hide	263		
S. Polden	254		
General Builders, Ltd.	247		
F. T. Chinchen & Co.	244		
Thompson & Beveridge	£239		
H. Heady	237		
E. Triggs 92, The Chase, Clapham*	226		

Deptford, Stanley-street (Additional Staircase, etc.).

H. L. Holloway	£1,169		
W. V. Goad	1,050		
Kirk & Randall	1,049		
W. Downs	1,024		
J. & C. Bowyer	1,021		
J. Smith & Sons, Ltd.	1,019		
J. F. Ford	1,015		
H. Leney & Son	988		
H. Groves	£988		
J. Marsland & Sons	981		
F. & H. F. Higgs	962		
W. Akers & Co.	950		
Holliday & Greenwood, Ltd.	920		
T. D. Leng, Evelyn-street, Deptford*	863		

LONDON.—For the Greenwich electricity generating-station (general wiring material), for the London County Council:—

Simplex Steel Conduit Co., Ltd.	£1,697	11	11
W. McGeoch & Co., Ltd.	1,480	0	9
Edison & Swan United Electric Light Co., Ltd.	1,424	16	0
Armorduct Manufacturing Co., Ltd.	1,423	14	9
General Electric Co., Ltd.	1,413	13	11
Conduits and Fittings, Ltd., London*	1,407	0	0
Verity's, Ltd.‡	1,144	4	0

‡ Incomplete tender.

LONDON.—For pier work, for the London County Council:—

J. Shelbourne & Co.	£6,387	0	0
Westminster Construction Co., Ltd.	4,596	17	10
J. R. Piper	4,158	14	7
Tilbury Contracting & Dredging Co., Ltd., Mark-lane, E.C.*	3,830	7	0

LONDON.—For constructing underground sanitary conveniences at Shepherd's Bush-green, for the Hammersmith Borough Council. Mr. H. Mair, Borough Surveyor, Town Hall, Broadway, Hammersmith:—

Mason & Co.	£6,916	0	0
Doulton & Co., Ltd.	6,558	0	0
G. Wimpey & Co.	6,090	0	0
B. E. Nightingale	5,989	0	0
Gardner & Hazell	5,962	4	7
R. Dean & Co.	5,868	0	0
C. Dearing & Son	5,795	0	0
W. J. Renshaw	5,789	0	0
B. Finch & Co., Ltd.	5,750	0	0
C. Gray	£5,737	16	0
Chambers Bros.	5,700	0	0
W. J. Dickens	5,646	0	0
Martin, Wells, & Co., Ltd.	5,510	0	0
Spencer, Santo, & Co., Ltd.*	5,509	0	0
A. Woods	5,500	0	0
Water Carriage Engineering Co., Ltd.	5,470	0	0
T. Pearce	5,390	0	0
C. Cruse & Co.	5,342	0	0

LONDON.—For erecting a branch library in Lillie-road, for the Fulham Borough Council. Mr. F. Wood, Borough Engineer and Surveyor, Town Hall, Fulham:—

Banyard & Sons	£4,680	B. E. Nightingale	£4,489
C. Dearing & Sons	4,676	A. Wood	4,384
W. Taylor & Co.	4,587	W. Wallis, Balham*	4,350

[Borough Surveyor's estimate, £4,970.]

LONDON.—For electric light installation, Rotherhithe station, for the London County Council:—

National Electric Construction Co., Ltd.	£153	0	
Tamplin & Makovski, Ltd.	152	0	
Barlow & Young	150	0	
Durell & Co.	145	10	
A. H. Marshall & Co.	£145	0	
F. J. Coleby & Co.	140	0	
Oliver, Clark, & Co.	135	0	
Ward Bros., 28A, Basinghall-street, E.C.*	130	0	

LONDON.—For the Greenwich electricity generating-station and sub-stations at Clapham and Streatham (induction motor generators), for the London County Council:—

Johnson & Phillips	£19	817	0
British Electric Plant Co., Ltd.		18,728	0
British Thomson-Houston Co., Ltd.		17,934	0
Siemens Bros. & Co., Ltd.		17,415	15†
Phœnix Dynamo Manufacturing Co., Ltd.		17,187	0
British Westinghouse Electric and Manufacturing Co., Ltd.		16,329	0‡
Brush Electrical Engineering Co., Ltd.		15,590	0
General Electric Co., Ltd.		15,491	0
Electric Construction Co., Ltd.		14,940	0
Dick, Kerr, & Co., Ltd., London*		14,747	10§
Electrical Co., Ltd.		14,364	0
Bruce Peebles & Co., Ltd.		12,800	0¶

†Alternative tender, £15,986 15s.; ‡ alternative tender, £15,917; § alternative tender, £13,660; ¶ not to specification.

LONDON.—For the Greenwich electricity generating-station (low-tension cables, etc.), for the London County Council:—

Edison & Swan United Electric Light Co., Ltd.	£2,701	8	10
Callender's Cable & Construction Co., Ltd.	2,595	1	0
W. T. Henley's Telegraph Works Co., Ltd.	2,553	10	0
W. T. Glover & Co., Ltd.	2,523	11	9
Siemens Bros. & Co., Ltd.	2,465	3	7
St. Helens Cable Co., Ltd.	2,446	11	3
British Insulated & Helsby Cables, Ltd.	2,438	17	
Western Electric Co., London*	2,232	4	9
Johnson & Phillips‡	2,214	13	1
W. F. Dennis & Co.	2,151	3	6

‡ Not to specification.

MAIDSTONE.—For builder's, cabinet-maker's work, etc., at Sessions House (Contract No. 1). Mr. F. W. Ruck, County Architect, Maidstone:—

G. McKenzie & Co., Ltd.	£2,307	13	0
Wallace & Co., Ltd.	2,120	16	10
Fire Resist Co., Ltd.	1,714	18	0
Goodall, Lamb, & Heighway, Ltd.	1,677	0	0
Cox Bros.	1,635	0	0
G. Wallis & Sons, Ltd.	1,568	0	0
Lascelles & Co.	£1,480	0	0
Corben & Co.	1,378	0	0
R. Avard	1,362	0	0
G. Pearce & Sons	1,272	0	0
Barden & Head	1,270	0	0
L. Seager	1,245	0	0
Elmore & Son, Maidstone*	1,197	10	0

MAIDSTONE.—For heating and ventilation, Sessions House (Contract No. 2). Mr. F. W. Ruck, County Architect, Maidstone:—

G. Browning	£560	0	0
Hayward & Co., Ltd.	493	0	0
Dargue, Griffiths, & Co., Ltd.	477	5	0
Kite & Co.	460	0	0
Bolton, Fane, & Co.	458	0	0
Brightside Engineering Co., Ltd.	429	15	0
Weekes & Son	406	0	0
Jones & Sons	404	0	0
Dawson & Co., Ltd.	403	0	0
Tice & Co.	399	10	0
W. Fox	397	0	0
G. Wallis & Sons, Ltd.	392	0	0
Lancashire Heating Co.	£390	0	0
Tamplin & Makorski	387	3	9
F. J. Phillips	385	0	0
R. & J. Pearson, Ltd.	379	0	0
Haynes Bros.	372	0	0
Corben & Co.	359	0	0
Potter & Sons	355	0	0
Cook & Sons	348	18	6
W. Freer	336	0	0
Elmore & Son	328	0	0
H. Goodwin	318	0	0
Cruttenden & Son	312	0	0
Dennis, Paine, & Co., Ltd., Maidstone*	297	0	0
E. Jeffery	234	0	0

NEWBURY.—For pulling down and re-building premises in Cheap-street, for the Governors of St. Bartholomew's Hospital and Grammar School. Mr. W. H. Bell, architect, the Market-place, Newbury :—

H. W. Godwin	£1,910 0 0	Kingerlee & Sons	£1,387 0 0
Hoskings Bros.	1,475 0 0	A. J. Chivels	1,340 7 0
G. Head	1,461 10 0	A. Brazier, Pound-st., Newbury*	1,298 0 0
Elms & Sons	1,453 11 6		

NEWTON ABBOT.—For the construction of a covered reservoir at Dunley (Chudleigh Knighton water supply), and supplying cast-iron pipes, etc., for the Rural District Council. Mr. S. C. Chapman, Engineer, Torquay :—

T. Doney	£1,376 16 10	Mardon & Winsor	£945 5 0
Pearce & Blackler	1,249 0 0	Steer & Pearse	921 6 2
J. Ford	1,227 0 0	T. Shaddock	911 18 7
E. Duke	1,139 4 10	E. Pike	898 11 8
J. Shaddock	1,058 15 3	W. T. Stevenson	896 0 0
F. A. A. Stacey	1,065 0 0	Hawking & Best, Teignmouth*	883 6 0
L. Taylor	969 4 6		
H. R. Cameron	968 7 6		
Devon Traction & Motor Co., Ltd.	950 1 7		

OTHERY (Somerset).—For house and shop for J. Cozens Esq. Mr. J. W. Hill, architect. Quantities supplied :—

Gleed Bros.	£875	Stockham	£599
Fursland	844	Bryer	595
Davis & Son	665	Baker	585
Allen	625	Palmer & Son*	581

SCOPWICK.—For erecting new Wesleyan chapel and school. Mr. J. R. Halkes, architect and surveyor, 11, Mint-street, Lincoln :—

B. Crookes	£777 16 7	R. L. Holland, West Parade, Lincoln*	£640 10 0
Halkes Bros.	729 0 0		
W. & M. Halkes	710 15 0		
Saxby	675 0 0		

SELLY OAK.—For street improvements, Bewdley-road, for the King's Norton and Northfield Urban District Council Mr. A. W. Cross, Surveyor, 23, Valentine-road, King's Heath :—

G. Trentham, 38, John Bright-street, Birmingham £117 18 8

SUNBURY-ON-THAMES.—For making-up Rooksmead-road, for the Urban District Council. Mr. H. F. Coales, Surveyor, Council Offices, Sunbury. Quantities by Surveyor :—

Hoffman	£420 14 6	T. Free & Sons	£293 18 0
C. Mott	364 1 0	A. C. Soan	292 18 5
T. Adams	327 0 0	W. Adamson	263 19 5½
G. Baldwin	322 10 0	G. Hebburn, Hersham*	230 11 6
J. Shelbourne & Co.	309 14 11		
E. Kavanagh & Co.	295 1 2		

SUTTON.—For oak fencing, with cast-iron posts, at Belmont Asylum, Brighton-road, Sutton, Surrey, for the Metropolitan Asylums Board. Messrs. T. Dinwiddy & Sons, architects, 54, Parliament-street, S.W. :—

J. T. Brooker	£555 0 0	Rowland Bros.	£377 10 0
J. Stenning & Son, Ltd.	545 0 0	Thames Steam Saw Mills, Ltd.	358 0 0
M. Marshall	544 10 0	Enness Bros., Erith*	342 0 0
A. Turner & Son	535 13 0		
J. & S. Legate	437 15 6		

SWANSEA.—For constructing new road and sewer from Sketty-road to Windsor-street and beyond, for the Pant-y-Gwydir Estate. Mr. C. H. Jenkins, surveyor, 1, Cambrian-place, Swansea. Quantities by surveyor :—

Bennett Bros.	£800 0	Griffith Davies, Paxton-yard, Swansea*	£599 0
J. & F. Weaver	796 0		
J. & D. Jones	756 0		
J. Williams	741 12	J. Maries & Son	569 0

SWANSEA.—For erecting a concrete reservoir at Clasemont, Morriston, and for laying water mains, for the Rural District Council. Mr. T. T. Williams, Engineer and Surveyor, Council Offices, Swansea :—

C. Hanney & Son, Clydach-road, Morriston, near Swansea* £605

SWANTON NOVERS (Norfolk).—For alterations and additions to Swanton Novers School, for the Norfolk Education Committee. Mr. A. J. Lacey, architect and surveyor, 6, Upper King-street, Norwich :—

Larner, East Dereham £569

SWANSEA.—For pipes for the Cwmrhydyceirw water supply works, for the Rural District Council. Mr. T. T. Williams, Surveyor, Alexandra-road, Swansea :—

Seventy-seven tons 4-in. Cast-Iron Pipes.

	Per ton.
T. Spittle, Ltd., Newport, Mon.*	£4 16 6

WALTHAMSTOW.—For erecting special schools for mentally and physically defective children, to accommodate sixty each, Clifton-avenue, for the Walthamstow Education Committee. Mr. H. Prosser, Architect to the Committee. Quantities by Mr. G. T. G. Wright, F.S.I., 3, Great Winchester-street, E.C. :—

W. H. Hyde	£7,469 0 0	W. J. Maddison	£6,054 0 0
Turtle & Appleton	6,930 0 0	F. & E. Davey	5,987 0 0
Martin, Wells, & Co.	6,750 0 0	Rowley Bros.	5,950 0 0
Kirk & Randall	6,745 0 0	A. G. Crisp	5,886 0 0
Groves & Sons	6,698 0 0	R. & E. Evans	5,782 0 0
H. C. Horswill	6,639 0 0	Knight & Son	5,776 0 0
Sans & Burley	6,585 0 0	J. & J. Dean	5,639 0 0
A. Faulks	6,200 0 0	Pollard & Brand	5,544 0 0
F. J. Coxhead	6,100 0 0	W. Manders	4,949 4 10

[Referred to the new Education Committee.]

WHITSTABLE.—For enlargement of police station. Mr. F. W. Ruck, County Architect, Maidstone :—

G. H. Denne & Son	£2,590	T. W. Porter	£2,349
Stroony Building Co., Ltd.	2,500	G. Browning	2,348
G. E. Wallis & Sons, Ltd.	2,468	W. W. Martin	2,300
H. J. Smith	2,398	Amos & Foad	2,280
R. Avard	2,383	E. Fuller & Sons	2,200
Pearce & Sons	2,350	Gann & Co., Whitstable*	2,189

WOKINGHAM.—For sewage disposal works, Wargrave, for the Rural District Council. Mr. R. Hassard, engineer, 1, Victoria-street, Westminster :—

A. T. Catley, 23, Lloyd-square, W.C.* £890

WOOLWICH.—For forming new areas and carrying out other works to subways and heater rooms at Brook Fever Hospital, Shooter's Hill, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief :—

Enness Bros.	£474	E. Wall, 2, Alice-terrace, Garratt-lane, Tooting, S.W.*	£241
W. Mills	387		
T. Cole	345		
E. Proctor & Son	263		

WROXHAM (Norfolk).—For alterations and additions to schools and house, for the Norfolk Education Committee. Mr. A. F. Scott, architect and surveyor, 24, Castle-meadow, Norwich :—

Scarles Bros., Norwich £644

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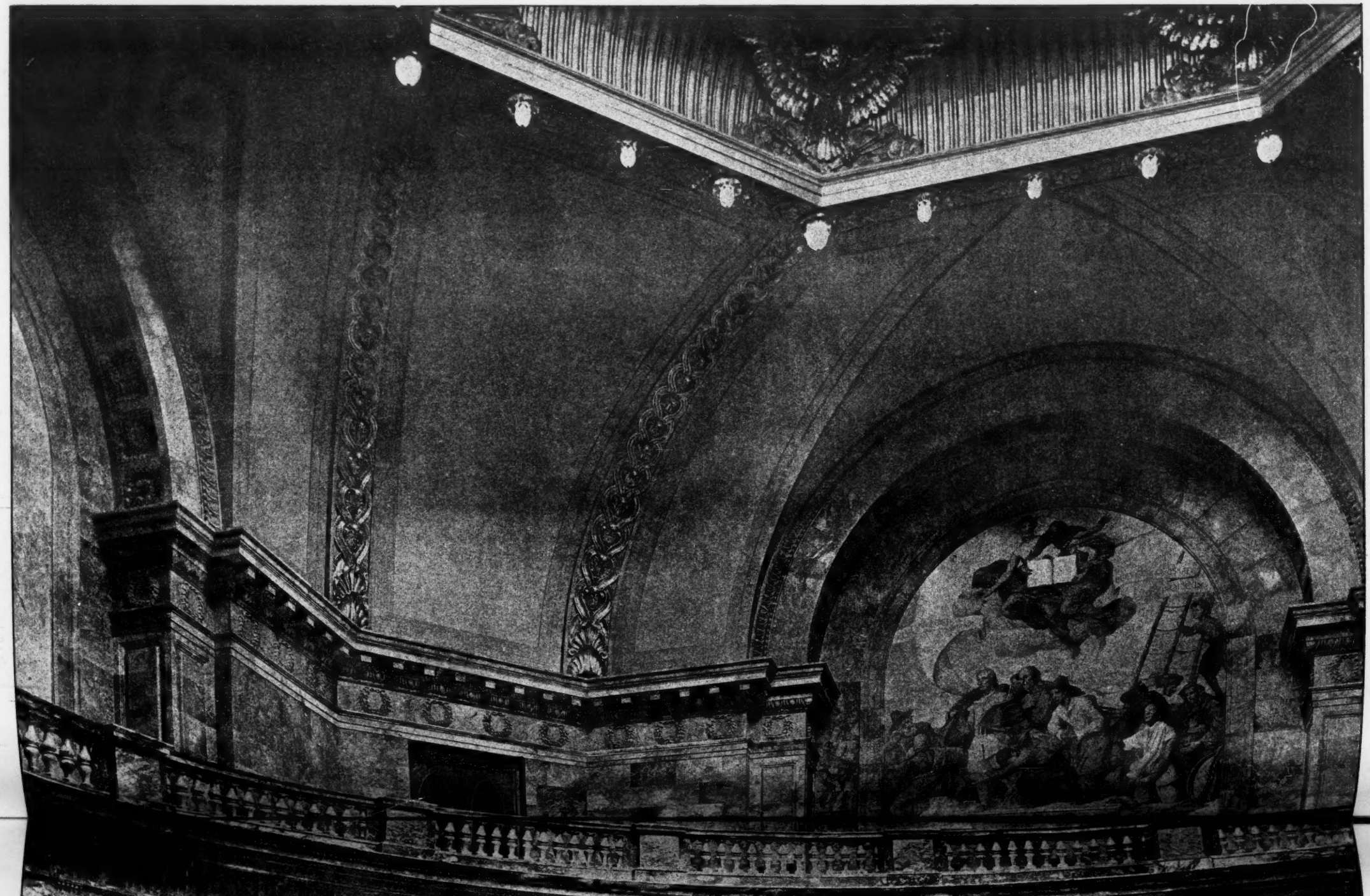

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VIEW IN MEMORIAL HALL, MASSACHUSETTS STATE HOUSE, BOSTON, MASS.—Mr. Charles Brigham, Architect.

(From the "American Architect.")

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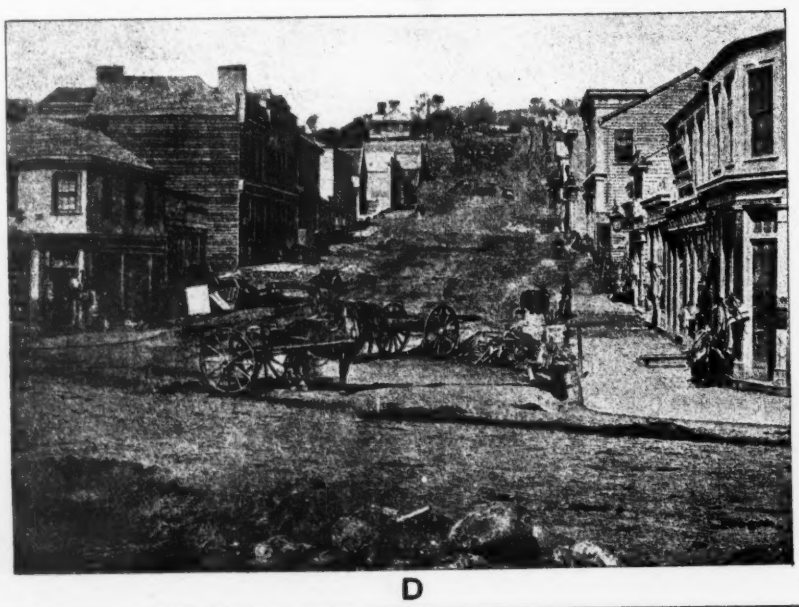

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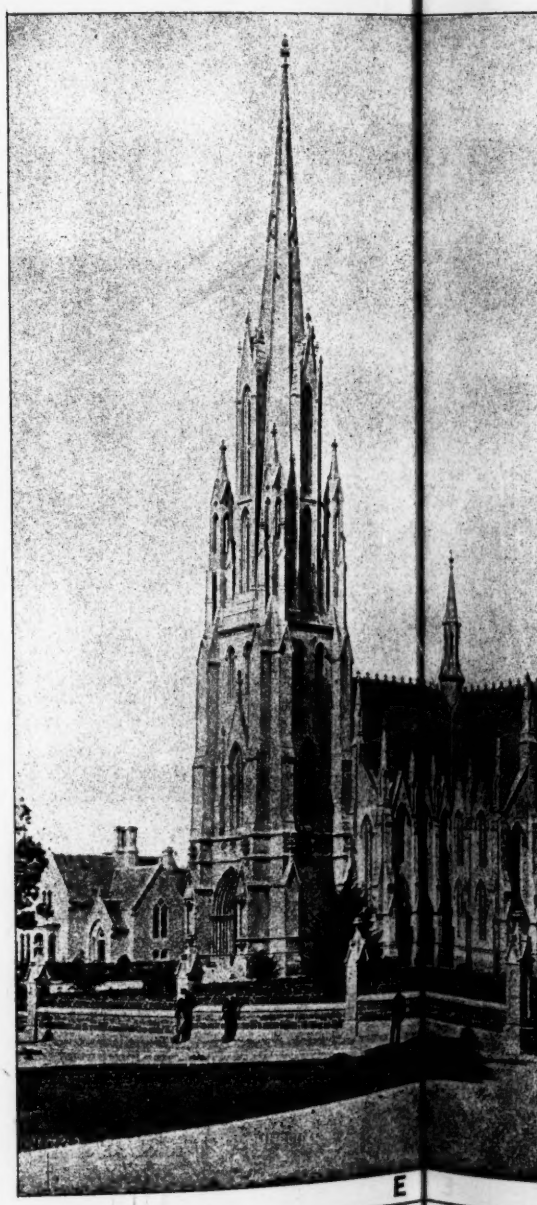

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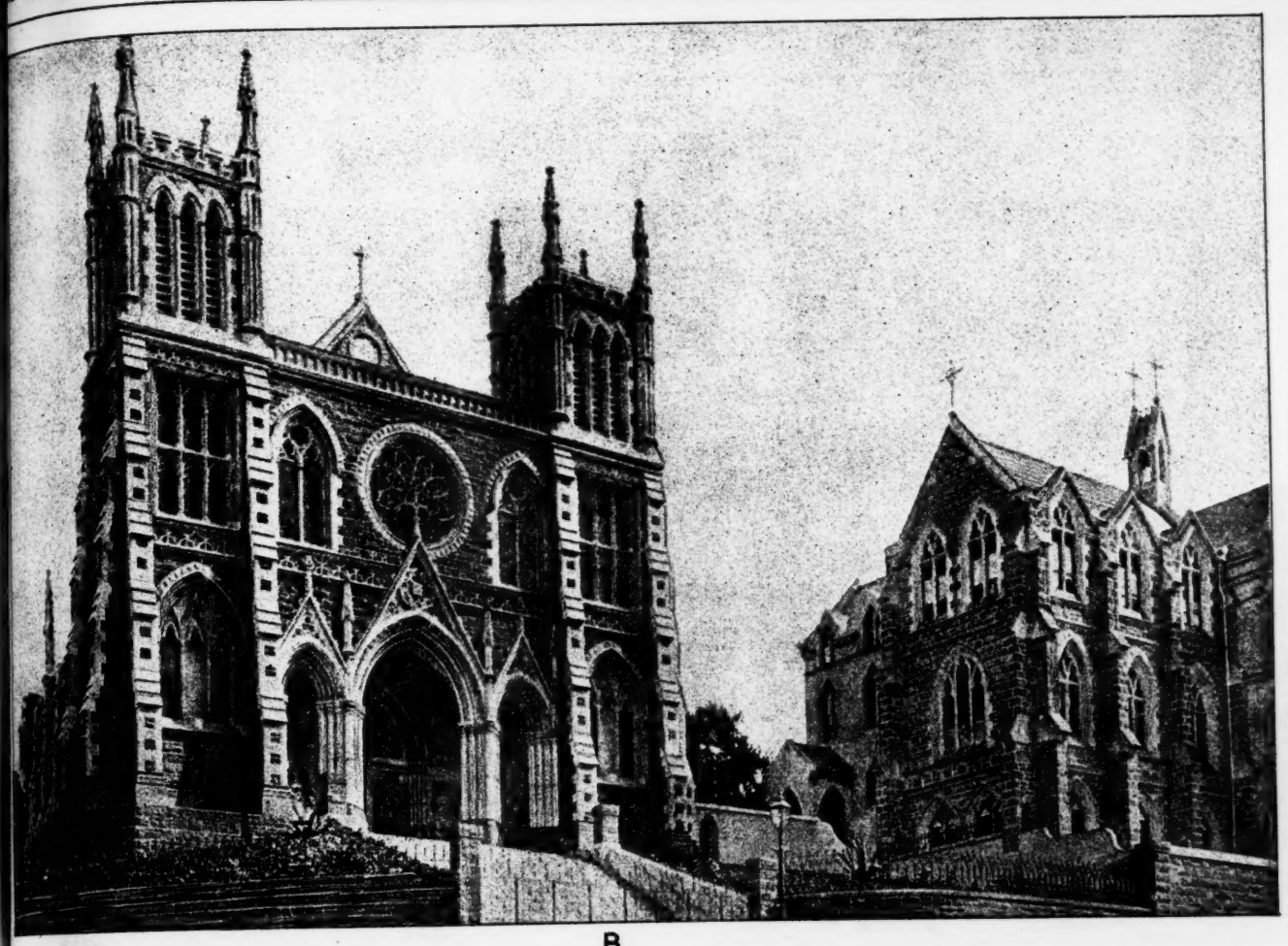

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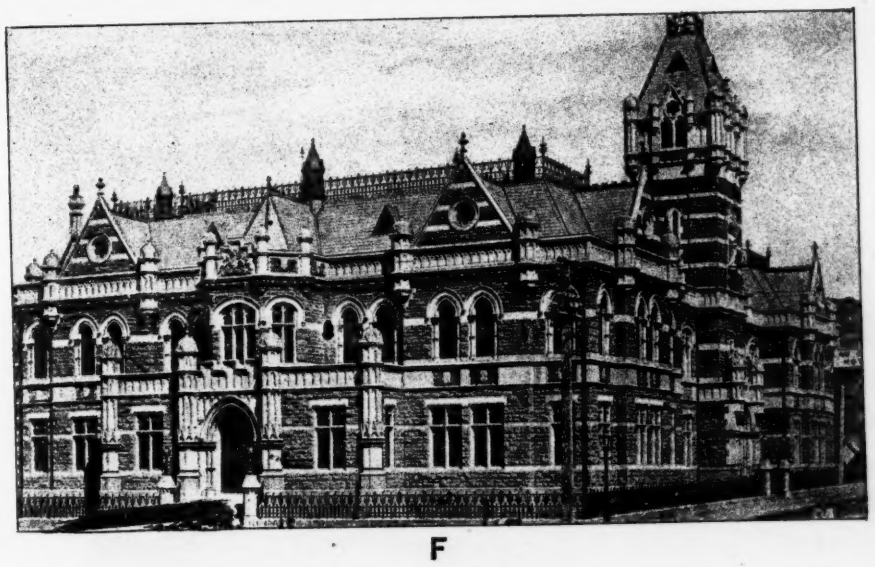

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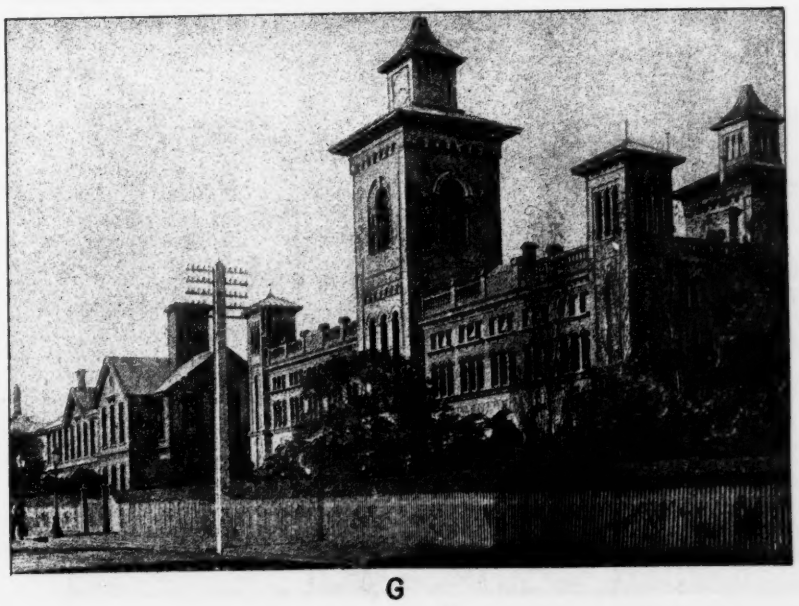

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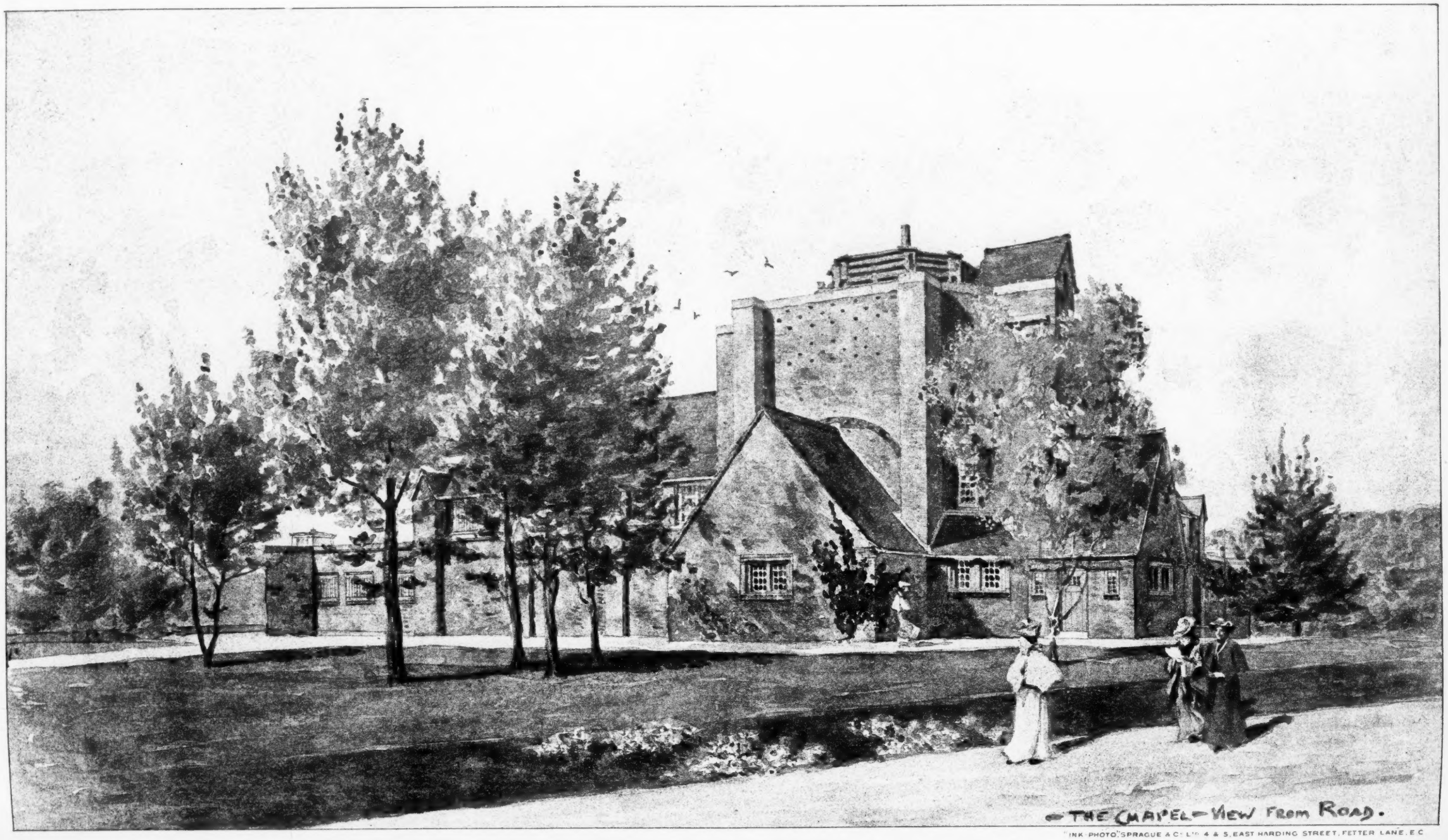
INTERIOR VIEW.



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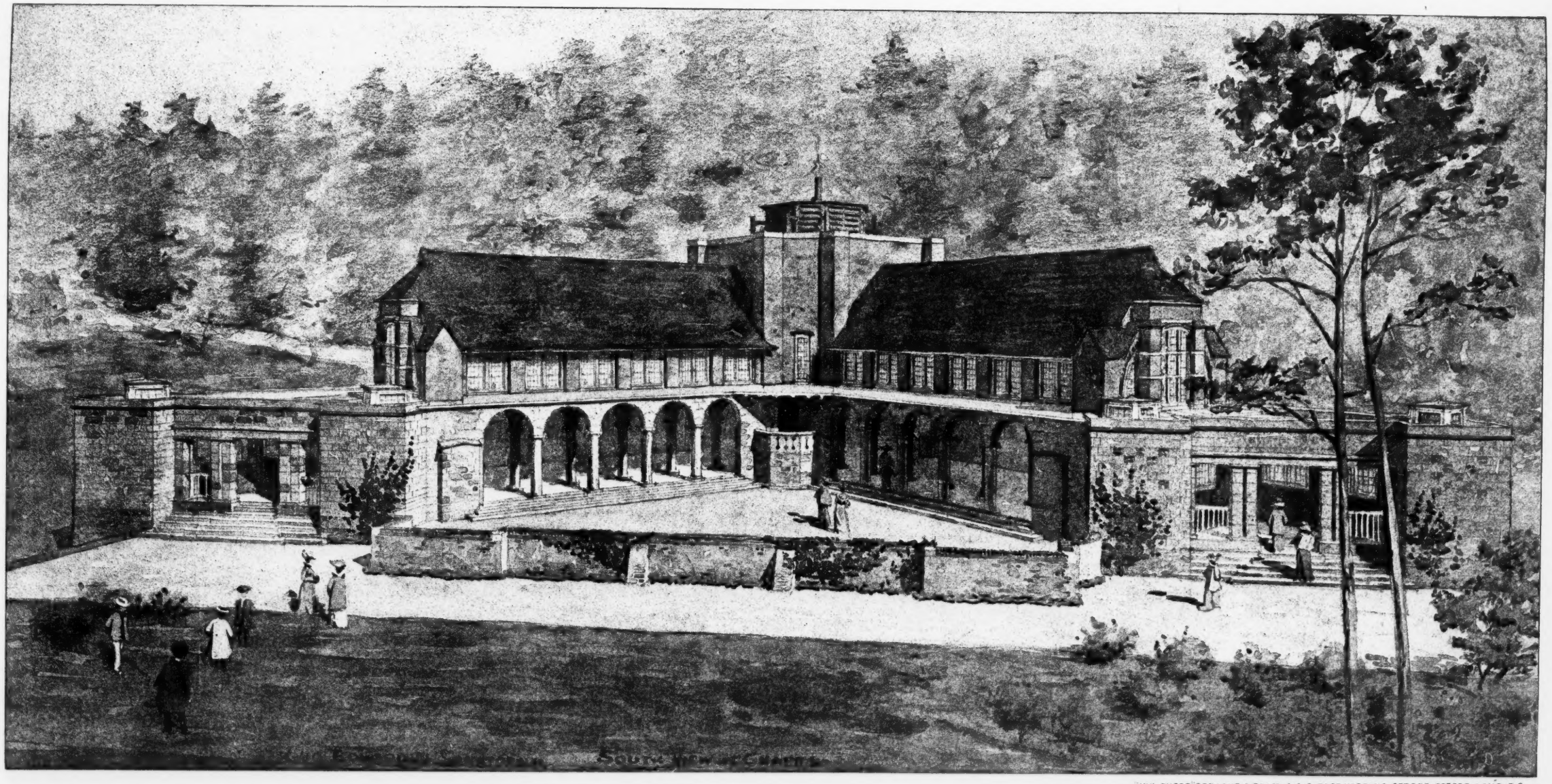
VIEW FROM ROAD.



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SOUTH VIEW.